The Home Medical Library

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By

KENELM WINSLOW, B.A.S., M.D.

Formerly Assistant Professor Comparative Therapeutics, Harvard University; Late Surgeon to the Newton Hospital; Fellow of the Massachusetts Medical Society, etc.

With the Coöperation of Many Medical Advising Editors and Special Contributors

IN SIX VOLUMES

First Aid :: Family Medicines :: Nose, Throat, Lungs, Eye, and Ear :: Stomach and Bowels :: Tumors and Skin Diseases :: Rheumatism :: Germ Diseases Nervous Diseases :: Insanity :: Sexual Hygiene Woman and Child :: Heart, Blood, and Digestion :: Personal Hygiene :: Indoor Exercise Diet and Conduct for Long Life :: Practical Kitchen Science :: Nervousness and Outdoor Life :: Nurse and Patient :: Camping Comfort :: Sanitation of the Household :: Pure Water Supply :: Pure Food Stable and Kennel

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STEWART EDWARD WHITE

Author of "The Forest," "The Mountains," "The Silent Places," "The Blazed Trail," etc.

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Volume VI

NERVOUSNESS
NURSING :: :: CAMP CURE

By S. WEIR MITCHELL, M.D., LL.D.

(Harvard, Edinburgh, Princeton)

Former President Philadelphia College of Physicians; Member National Academy of Sciences, Association of American Physicians, etc. Author of essays: "Injuries to Nerves," "Doctor and Patient," "Fat and Blood," etc.; of scientific works: "Researches Upon the Venom of the Rattlesnake," etc.; of novels: "Hugh Wynne," "Characteristics," "Constance Trescott," "The Adventures of François," etc.

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Part I

NERVOUSNESS
CONVALESCENCE
OUTDOOR LIFE

BY

S. WEIR MITCHELL

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We beg to tender grateful acknowledgment to author and publisher for the use, in Part I, of essays from "Doctor and Patient," by S. Weir Mitchell, copyright, 1904, by J. B. Lippincott & Company.

INTRODUCTORY[1]

If my power to say what is best fitted to help my readers were as large as the experience that guides my speech, I should feel more assured of its value. But sometimes the very excess of the material from which one is to deduce formulas and to draw remembrances is an embarrassment, for I think I may say without lack of modesty in statement, that perhaps scarce any one can have seen more of women who have been made by disease, disorder, outward circumstance, temperament, or some combination of these, morbid in mind, or been tormented out of just relation to the world about them.

The position of the physician who deals with this class of ailments, with the nervous and feeble, the pain-worn, the hysterical, is one of the utmost gravity. It demands the kindliest charity. It exacts the most temperate judgments. It requires active, good temper. Patience, firmness, and discretion are among its neces-

[1] Extracts from Dr. Mitchell's Introductory to "Doctor and Patient."—Editor.

sities. Above all, the man who is to deal with such cases must carry with him that earnestness which wins confidence. None other can learn all that should be learned by a physician of the lives, habits, and symptoms of the different people whose cases he has to treat. From the rack of sickness sad confessions come to him, more, indeed, than he may care to hear. To confess is, for mysterious reasons, most profoundly human, and in weak and nervous women this tendency is sometimes exaggerated to the actual distortion of facts. The priest hears the crime or folly of the hour, but to the physician are oftener told the long, sad tales of a whole life, its far-away mistakes, its failures, and its faults. None may be quite foreign to his purpose or needs. The causes of breakdowns and nervous disaster, and consequent emotional disturbances and their bitter fruit, are often to be sought in the remote past. He may dislike the quest, but he cannot avoid it. If he be a student of character, it will have for him a personal interest as well as the relative value of its applicative side. The moral world of the sick-bed explains in a measure some of the things that are strange in daily life, and the man who does not know sick women does not know women.

I have been often asked by ill women if my

contact with the nervous weaknesses, the petty moral deformities of nervous feminine natures, had not lessened my esteem for woman. I say, surely, no! So much of these is due to educational errors, so much to false relationships with husbands, so much is born out of that which healthfully dealt with, or fortunately surrounded, goes to make all that is sincerely charming in the best of women. The largest knowledge finds the largest excuses, and therefore no group of men so truly interprets, comprehends, and sympathizes with woman as do physicians, who know how near to disorder and how close to misfortune she is brought by the very peculiarities of her nature, which evolve in health the flower and fruitage of her perfect life.

CHAPTER I

Nervousness and Its Influence on Character

THERE are two questions often put to me which I desire to use as texts for the brief essay or advice of which nervousness [1] is the heading. As concerns this matter, I shall here deal with women alone, and with women as I see and know them. I have elsewhere written at some length as to nervousness in the male, for he, too, in a minor degree, and less frequently, may become the victim of this form of disability.

So much has been written on this subject by myself

[1] Neither *nerves* nor *nervousness* are words to be found in the Bible or Shakespeare. The latter uses the word nerve at least seven times in the sense of sinewy. *Nervy*, which is obsolete, he employs as full of nerves, sinewy, strong. It is still heard in America, but I am sure would be classed as slang. Writers, of course, still employ nerve and nervous in the old sense, as a nervous style. Bailey's dictionary, 1734, has nervous, —sinewy, strongly made. Robt. Whytte, Edin., in the preface to his work on certain maladies, 1765, says, "Of late these have also got the name of nervous," and this is the earliest use of the word in the modern meaning I have found. Richardson has it in both its modern meanings, "vigorous," or "sensitive in nerves, and consequently weak, diseased." Hysteria is not in the Bible, and is found once in Shakespeare; as, "Hysterica passio, down," Lear ii. 4. It was common in Sydenham's day,—*i.e.*, Charles II. and Cromwell's time,—but he classified under hysteria many disorders no longer considered as of this nature.

and others, that I should hesitate to treat it anew from a mere didactic point of view. But, perhaps, if I can bring home to the sufferer some more individualized advice, if I can speak here in a friendly and familiar way, I may be of more service than if I were to repeat, even in the fullest manner, all that is to be said or has been said of nervousness from a scientific point of view.

The two questions referred to above are these: The woman who consults you says, "I am nervous. I did not use to be. What can I do to overcome it?" Once well again, she asks you,—and the query is common enough from the thoughtful,—"What can I do to keep my girls from being nervous?"

Observe, now, that this woman has other distresses, in the way of aches and feebleness. The prominent thing in her mind, nervousness, is but one of the symptomatic results of her condition. She feels that to be the greatest evil, and that it is which she puts forward. What does she mean by nervousness, and what does it do with her which makes it so unpleasant? Remark also that this is not one of the feebler sisters who accept this ill as a natural result, and who condone for themselves the moral and social consequences as things over which they have little or no reasonable control. The person who asks this fertile question has once been well, and resents as unnatural the weaknesses and incapacities which now she feels. She wants to be helped, and will help you to help her. You have an

active ally, not a passive fool who, too, desires to be made well, but can give you no potent aid. There are many kinds of fool, from the mindless fool to the fiend-fool, but for the most entire capacity to make a household wretched there is no more complete human receipt than a silly woman who is to a high degree nervous and feeble, and who craves pity and likes power. But to go back to the more helpful case. If you are wise, you ask what she means by nervousness. You soon learn that she suffers in one of two, or probably in both of two, ways. The parentage is always mental in a large sense, the results either mental or physical or both. She has become doubtful and fearful, where formerly she was ready-minded and courageous. Once decisive, she is now indecisive. When well, unemotional, she is now too readily disturbed by a sad tale or a startling newspaper-paragraph. A telegram alarms her; even an unopened letter makes her hesitate and conjure up dreams of disaster. Very likely she is irritable and recognizes the unreasonableness of her temper. Her daily tasks distress her sorely. She can no longer sit still and sew or read. Conversation no longer interests, or it even troubles her. Noises, especially sudden noises, startle her, and the cries and laughter of children have become distresses of which she is ashamed, and of which she complains or not, as her nature is weak or enduring. Perhaps, too, she is so restless as to want to be in constant motion, but that seems to tire her

as it once did not. Her sense of moral proportion becomes impaired. Trifles grow large to her; the grasshopper is a burden. With all this, and in a measure out of all this, come certain bodily disabilities. The telegram or any cause of emotion sets her to shaking. She cries for no cause; the least alarm makes her hand shake, and even her writing, if she should chance to become the subject of observation when at the desk, betrays her state of tremor. What caused all this trouble? What made her, as she says, good for nothing? I have, of course, put an extreme case. We may, as a rule, be pretty sure, as to this condition, that the woman has had some sudden shock, some severe domestic trial, some long strain, or that it is the outcome of acute illness or of one of the forms of chronic disturbance of nutrition which result in what we now call general neurasthenia or nervous weakness,—a condition which has a most varied parentage. With the ultimate medical causation of these disorderly states of body I do not mean to concern myself here, except to add also that the great physiological revolutions of a woman's life are often responsible for the physical failures which create nervousness.

If she is at the worst she becomes a ready victim of hysteria. The emotions so easily called into activity give rise to tears. Too weak for wholesome restraint, she yields. The little convulsive act we call crying brings uncontrollable, or what seems to her to be

uncontrollable, twitching of the face. The jaw and hands get rigid, and she has a hysterical convulsion, and is on the way to worse perils. The intelligent despotism of self-control is at an end, and every new attack upon its normal prerogatives leaves her less and less able to resist.

Let us return to the causes of this sad condition. It is a common mistake to suppose that the well and strong are not liable to onsets which cause nervousness. As a rule, they rarely suffer; but we are neatly ballasted, and some well people are nearer to the chance of being so overturned than it is pleasant to believe. Thus it is that what for lack of a better name we call "shock" is at times and in some people capable of inflicting very lasting evil in the way of nervousness.

We see this illustrated in war in the effects of even slight injuries on certain people. I have known a trivial wound to make a brave man suddenly timid and tremulous for months, or to disorder remote organs and functions in a fashion hard to understand. In the same way, a moral wound for which we are not prepared may bring about abrupt and prolonged consequences, from which the most robust health does not always protect us, and which is in proportion disastrous if the person on whom it falls is by temperament excitable or nervous. I have over and over seen such shocks cause lasting nervousness. I knew a stout young clerk who was made tremulous, cowardly, sleep-

less, and, in the end, feeble, from having at a funeral fallen by mishap into an open grave. I have seen a strong woman made exquisitely nervous owing to the fall of a wall which did her no material damage. Earthquakes cause many such cases, and bad ones, as we have had of late sad occasion to know. The sudden news of calamity, as of a death or financial disaster, has in my experience made vigorous people nervous for months. A friend of mine once received a telegram which rather brutally announced the disgrace of one dear to him. He had a sense of explosion in his head, and for weeks was in a state of nervousness from which he but slowly recovered. There is something in cases like his to think about. The least preparation would have saved him, and we may be sure that there is wisdom in the popular idea that ill news should be gently and guardedly broken to such as must hear it. To be forewarned is to be forearmed we say with true wisdom.

Prolonged strain of mind and body, or of both, is another cause apt to result in health failures and in nervousness as one attendant evil. The worst one I know is to nurse some person through a long disease. Women are apt to think that no one can so well care for their sick as they. Intrusion on this duty is resented as a wrong done to their sense of right. The friend who would help is thrust aside. The trained nurse excites jealous indignation. The volunteer gives herself soul and body to the hardest of tasks, and is

rather proud of the folly of self-sacrifice. How often do we hear a woman say with pride, "I have not slept nor had my clothes off for a week." She does not see that her very affection unfits her for the calm control of the sick-room, and that her inevitable anxiety is incompatible with tranquil judgment. If you tell her that nursing is a profession, and that the amateur can never truly fill the place of the regular, she smiles proudly, and thinks that affection is capable of all things, and that what may be lost in skill will be made up in thoroughness and compensated by watchfulness, such as she believes fondly only love can command. It is hard to convince such a woman.

It rarely chances that women are called upon to suffer in their common lives emotional strains through very long periods, and at the same time to sustain an excess of mental and physical labor. In days of financial trouble this combination is sometimes fatal to the health of the strongest men. When a loving relative undertakes to nurse one dear to her through a protracted illness, she subjects herself to just such conditions of peril as fall upon the man staggering under financial adversity.

The analogy to which I have referred is curiously complete. In both there is the combination of anxiety with physical and mental overwork, and in both alike the hurtfulness of the trial is masked by the excitement which furnishes for a while the means of waging unequal battle, and prevents the sufferer from know-

ing or feeling the extent of the too constant effort he or she is making. This is one of the evils of all work done under excessive moral stimulus, and when the excitation comes from the emotions the expenditure of nerve-force becomes doubly dangerous, because in this case not only is the governing power taken away from the group of faculties which make up what we call common sense, but also because in women overtaxing the emotional centres is apt to result in the development of some form of breakdown, and in the secondary production of nervousness or hysteria.

If she cannot afford a nurse, or will not, let her at least share her duties with some one. Above all, let her know that every competent doctor watches even the best of his trained nurses, and insists that they shall be in the open air daily. Your good wife or mother thinks in her heart that when she has sickness at home she should not be seen out of doors, and that to eat, sleep, or care for herself is then wicked or something like that.

If you can make a woman change her dress, eat often, bathe as usual, and take the air, even if it must be so at night, she can stand a great deal, especially if you insist that she shall sleep her usual length of time. If she will not listen or obey, she runs a large risk, and is very apt to collapse as the patient recovers, and to furnish her family with a new case of illness, and the doctor and herself with some variety

of disorder of mind or body arising out of this terrible strain on both.

If physical tire, without chance for rest, with anxiety and incessant vigilance, is thus apt to cause wrecks in the nurse of ordinary illness, far more apt is it to involve breakdowns when a loving mother or sister endeavors to care for a protracted case of insanity. Unless the man of the house interferes, this effort is sure to bring disaster. And the more sensitive, imaginative, and loving is the self-appointed nurse, the more certain is she to suffer. There are no cases in which it is so hard to advise, none in which it is so difficult to get people to follow your advice. The morbid view of insanity, the vague sense of its being a stain, the horror of the hospital, all combine to perplex and trouble us. Yet here, if at any time, it is wise to cast the whole weight on the physician and to abide by his decision.

Families see this peril, and can be often made to understand the unwisdom of this sacrifice; but, in cases of prolonged disease, such as hysteria in a bedridden sister or mother, it is hard to make them hear reason, and still more hard to make the nursing relation understand that she is of necessity the worst of nurses, and may share the wreck she helps to make.

These old and happily rare cases of chronic nervous invalids are simply fatal to loving nurses. I have said, perhaps too often, that invalidism is for most of us a moral poison. Given a nervous, hysterical,

feeble woman, shut out from the world, and if she does not in time become irritable, exacting, hungry for sympathy and petty power, she is one of nature's noblest. A mother or sister gives herself up to caring for her. She is in the grip of an octopus. Every fine quality of her nature helps to hurt her, and at last she breaks down utterly and can do no more. She, too, is become nervous, unhappy, and feeble. Then every one wonders that nobody had the sense to see what was going on. I can count many examples of nervousness which have arisen in this fashion. Perhaps my warning may not be without good results. Over and over I have made like statements in one or another form, and the increasing experience of added years only contributes force to my belief that, in still urging the matter, I am doing a serious duty. I ought to say also that the care of these invalids is, even to the well-trained and thoughtful nurse, one of the most severe of moral and physical trials, and that, in the effort to satisfy the cravings of these sick people, I have seen the best nurses crumble as it were in health, and at last give up, worn out and disheartened. A part of the responsibility of such disasters falls on the physician who forgets that it should be a portion of his duty to look sharply after the health of too devoted nurses as well as that of selfish patients.

I have now said all that I need to say of the causes which, directly or indirectly, evoke the condition we call nervousness. Many of these are insidious in their

growth. Too often the husband, if she be married, is immersed in his own cares, and fails to see what is going on. "I am not ill enough to see a doctor," she says, and waits until she has needlessly increased the difficulties of his task. Let us suppose, however, that, soon or late, she is doing, in a merely medical way, all that he insists upon, what more can she do for herself? She has before her very likely a long trial, severe in its exactions in proportion to her previous activity of mind and body. She most probably needs rest, and now that physicians have learned its value, and that not all ills are curable by exertion, she is told to lie down some hours each day. If she cannot get rid of her home duties, let her try at least to secure to herself despotically her times of real and true rest. To lie down is not enough. What she needs is undisturbed repose, and not to have to expect every few minutes to hear at her door the knocks and voices of servants or children. It is difficult to secure these most needful times of silent security even in health, as most women too well know. Very often the after-meal hours are the most available and the more desirable as times of repose, because in the weak digestion goes on better when they are at rest. She will find, too, that some light food between meals and at bedtime is useful, but this is within the doctor's province, and I am either desirous to avoid that or to merely help him. Air, too, she wants rather than any such great exertion as wearies; and, as regards

this latter, let her understand that letter-writing, of which many women are fond, must be altogether set aside.

It is, however, the moral aspects of life which will trouble her most. The cares which once were easily shaken off stick to her like burrs, and she carries them to bed with her. I have heard women say that men little know the moral value to women of sewing. It becomes difficult when people are nervous, but this or some other light handiwork is then invaluable.

By this time she has learned that her minor, every-day duties trouble her, and when about to meet them, if wise, she will put herself, as we all can do, in an attitude of calmness. This applies still more forcibly to the larger decisions she must so often have to make as to children, house, and servants. Worry, as I have elsewhere said, is as sand in the mental and moral machinery, and easily becomes a mischievous habit. We can stand an immense deal of work, and can, even if weak, bear much, if only we learn to dismiss small questions without worry or unreasonable re-considerations. As concerns temper, we constantly prepare ourselves to meet even just causes of anger, and thus by degrees learn more and more easily, and with less and less preparation, to encounter tranquilly even the most serious vexations. In health, when not nervous, a woman well knows that there are seasons when she must predetermine not to be nervous; and when ill-health has made her emotional, she must learn

to be still, more constantly on guard. Above all, it is the small beginnings of nervousness which she has to fear.

Tears are, for the nervous woman, the seed of trouble. Let her resolutely shun this commencement of disaster. The presence of others is apt to insure failure of self-control. A word of pity, the touch of affection, the face of sympathy, double her danger. When at her worst, let her seek to be alone and in silence and solitude to fight her battle. Fresh air, a bath (if she can bear that), even the act of undressing, will often help her. I once quoted a valued friend as saying that "we never take out of a cold bath the thoughts we take into it," and the phrase is useful and true.

Above all, let such a woman avoid all forms of emotion. Her former standards of resistance apply no longer, and what once did not disturb will now shake her to the centre. A time comes, however, when she will do well to meet and relearn to bear calmly all the little emotional trials of life. I know a nervous woman—and no coward, either—who for months, and wisely, read no newspapers, and who asked another to open and read all her letters and telegrams. The day came when she was able to resume the habits of health, but for a long time the telegram at least was a sore distress, and she could only meet it by a resolute putting of herself in the attitude of tranquillity of which I have spoken. To say more should be needless. For

the nervous strong emotions are bad or risky, and from violent mirth to anger all are to be sedulously set aside. Calm of mind and quiet of body are what she most needs to aid the more potent measures of the physician.

The woman in the situation I have described has probably a variety of symptoms on which her condition causes her to dwell. A great many of them are of little practical moment. If she is irresolute and weak, she yields where she should not, and finds for inactivity or for fears ample excuses in the state of her own feelings. An unwholesome crop of disabilities grows out of these conditions. It then becomes the business of her physician to tell her what is real, what is unreal, what must be respected, what must be overcome or fought. She has acquired within herself a host of enemies. Some are strong, some are feeble. The hour for absolute trust has arrived, and she must now believe in her adviser, or, if she cannot, she must acquire one in whom her belief will be entire and unquestioning.

Let us take an illustration. Such a woman is apt enough to suffer from vertigo or giddiness. "If I walk out," she says, "I become giddy. I am rarely free from this unless I am in bed, and it terrifies me." You know in this case that she is still strong enough to exercise in moderation. You say, "Walk so much daily. When you fall we will think about stopping. Talk to some one when you go out; have

a friend with you, but walk." She must believe you to succeed. This is a form of faith-cure which has other illustrations. You tell her that she must disregard her own feelings. She credits you with knowing, and so wins her fight.

There is a sense of fatigue which at some time she should learn to treat with disrespect, especially when disuse of her powers has made their exercise difficult, and yet when returning health makes it wise to employ them. To think, and at last to feel sure that she cannot walk is fatal. And above all, and at all times, close attention to her own motions is a great evil. We cannot swallow a pill because we think of what, as regards the larger morsels of food, we do automatically. Moreover, attention intensifies fatigue. Walk a mile, carefully willing each leg-motion, and you will be tired. The same evil results of attention are observed in disease as regards other functions over which we seem in health to be without direct power of control.

"Mind-cure," so called, has, in some shape, its legitimate sphere in the hands of men who know their profession. It is not rare to find among nervous women a few in whom you can cause a variety of odd symptoms by pressing on a tender spine and suggesting to the woman that now she is going to feel certain pains in breast, head, or limbs. Nervous women have, more or less, a like capacity to create or intensify pains and aches, but when a woman is

assured that she only seems to have such ailments she is apt, if she be one kind of woman, to be vexed. These dreamed pains—I hardly know what else to call them—are, to her, real enough. If she be another kind of woman, if she believes you, she sets herself to disregard these aches and to escape their results by ceasing to attend to them. You may call this mind-cure or what you will, but it succeeds. Now and then you meet with cases in which, from sudden shock or accident, a woman is led to manufacture a whole train of disabling symptoms, and if in these instances you can convince her that she is well and can walk, eat, etc., like others, you make one of those singular cures which at times fall to the luck of mind- or faith-cures when the patient has not had the happy fortune to meet with a physician who is intelligent, sagacious as to character, and has the courage of his opinions. I could relate many such cases if this were the place to do so, but all I desire here is to win the well woman and the nervously-sick woman to the side of the physician. If she flies from him to seek aid from the ignorant fanatic, she may, in rare cases, get what her trained adviser ought to give her and she be willing to use, while in unskilful hands she runs sad risks of having her too morbid attention riveted to her many symptoms; for to think too much about their disorders is, on the whole, one of the worst things which can happen to man or woman, and wholesome self-attention is difficult, nay, impossible, to command without

help from a personally-uninterested mind outside of oneself.

I cannot leave this subject without a further word of solemn warning. In my youth we had mesmerism with its cures, then we had and have spiritualism with its like pretensions. From time to time we have had faith-cures. They come and they go, and have no stable life. The evil they do lives after them in the many mental wrecks they leave. When the charlatan Newton was ordering every class of the sick to get well, I was called upon to see case after case of the most calamitous results on mind and body. Now and then he had the luck to meet some one who was merely idea-sick,—a class of cases we know well. Then he made a cure which would have been as easy to me as to him. I made much inquiry, but could never find a case of organic disease with distinct tissue-changes which he had cured. A man with hopeless rheumatic alterations of joints was made to walk a few steps without crutches. This he did at sore cost of pain, and then came to me to tell me his tale with a new set of crutches, the healer having kept the old set as evidence of the cure. And now we have the mind-cure, Christian science and the like,—a muddle of mystical statements, backed by a medley of the many half-examined facts, which show the influence of mental and moral states over certain forms of disorder. The rarity of these makes them to be suspected. Hardly any have the solid base of a thorough medical

study, and we lose sight of them at the moment of cure and learn nothing as to their future.

The books on mind-cure are calculated to make much and serious evil. I have read them with care, and have always risen from them with the sense of confusion which one would have if desired to study a pattern from the back of a piece of embroidery. There is, however, a class of minds which delight in the fogs of mystery, and, when a book puzzles them, accept this as evidence of depth of thought. I have been bewildered at times by the positiveness and reasoning folly of the insane, and I think most trained intelligences will feel that books like these mystical volumes require an amount of care and thinking to avoid bewilderment of which the mass of men and women are not possessed. In a few years they will be the rarely read and dusty volumes, hid away in libraries, and consulted only by those who undertake the sad task of writing the history of credulity. Their creed will die with them, and what is best of it and true will continue to be used by the thoughtful physician, as it has been in all ages. But, meanwhile, it is doing much harm and little good. Every neurologist sees already some of its consequences, and I, myself, have over and over had to undo some of the evil it had done.

Our nervous woman is well. Slowly, very slowly, she has won flesh and color, which means gain in quality and quantity of blood. By degrees, too, she

has been able to return to the habits and endurances of health. And now she asks that other question, "I have daughters who are yet young, but how shall I guard them against nervousness?" and again puts forward this single complex symptom in disregard of the states of body which usually accompany it, and are to us matters quite as grave. She knows well that the mass of women are by physiological nature more liable to be nervous than are men. It is a sad drawback in the face of the duties of life, that a very little emotional disturbance will suffice to overcome the woman as it does not do the man, and that the same disease which makes him irritable makes her nervous. Says Romanes, in an admirable and impartial article on the mental differences of men and women, "She is pre-eminent for affection, sympathy, devotion, self-denial, modesty, long-suffering or patience under pain, disappointment, and adversity, for reverence, veneration, religious feeling, and general morality." I accept his statement to add that these very virtues do many of them lead to the automatic development of emotion, which, in its excesses and its uncontrolled states, is the parent of much of the nervousness not due to the enfeeblement of disease.[1]

With the intellectual differences between man and woman I have here little to do. That there is difference, both quantitative and in a measure qualitative, I believe, nor do I think any educational change in

[1] *Journal of Popular Science*, July, 1887.

generations of women will ever set her, as to certain mental and moral qualifications, as an equal beside the man. It would be as impossible as to make him morally and physically, by any educational or other training, what the woman now is, his true superior in much that is as high, and as valuable as any mental capacities he may possess; nor does my creed involve for woman any refusal of the loftiest educational attainments. I would only insist on selection and certain limitations as to age of training and methods of work, concerning which I shall by and by have something more to say. Neither would I forbid to her any profession or mode of livelihood. This is a human right. I do not mean to discuss it here either as citizen or physician; but, as man, I like to state for my fellow-man that there are careers now sought and won and followed by her which for him inevitably lessen her true attractiveness, and to my mind make her less fit to be the "friendly lover and the loving friend."[1] Æsthetic and other sacrifices in this direction are, however, her business, not mine, and do not influence my practical judgments as to what freedom to act is or should be hers in common with men. For

[1] One would like to know how many women truly want the suffrage, and how, when it was won, the earnest anti-tariff wife would construe the marriage service in the face of the husband's belief in high tariff. The indirect influence of women in politics is worth a thought. We felt it sorely in 1861, and thence on to the war's end, and to-day it is the woman who is making the general prohibition laws probable. For ill or good she is still a power in the state.

most men, when she seizes the apple, she drops the rose. I am a little afraid that Mrs. Lynn Linton is right as to this, but it took some courage to say what she said,[1] and she looks at the matter from a more practical point of view, and deserves to be read at length rather than quoted in fragments.

I return to the subject. We want our young girl to be all that Romanes says she is. We desire, too, that she shall be as thoroughly educated in relation to her needs as her brothers, and that in so training her we shall not forget that my ideal young person is to marry or not, and, at all events, is to have a good deal of her life in her home with others, and should have some resources for minor or self-culture and occupation besides the larger ones which come of more distinctively intellectual acquirements.

I turn now to the mother who asks this question, and say, "What of your boys? Why are you not concerned as to them?" "Oh, boys are never nervous. One couldn't stand that; but they never are. Girls are so different." My answer is a long one. I wish I could think that it might be so fresh and so attractive as to secure a hearing; but the preacher goes on, Sunday after Sunday, saying over and over the same old truths, and, like him, with some urgency within me to speak, I can only hope that I may be able so to restate certain ancient verities as to win for them a novel respect and a generous acceptation.

[1] *Fortnightly*, 1886.

The strong animal is, as a rule, the least liable to damaging emotion and its consequences. Train your girls physically, and, up to the age of adolescence, as you train your boys. Too many mothers make haste to recognize the sexual difference. To run, to climb, to swim, to ride, to play violent games, ought to be as natural to the girl as to the boy. All this is fast changing for us, and for the better. When I see young girls sweating from a good row or the tennis-field, I know that it is preventive medicine. I wish I saw how to widen these useful habits so as to give like chances to the poor, and I trust the time will come when the mechanic and the laborer shall insist on public play-grounds as the right of his little ones.[1]

The tender mother, who hates dirt and loves neatness, and does not like to hear her girls called tom-boys, may and does find it hard to cultivate this free out-door life for her girls even when easy means make the matter less difficult than it is for the caged dweller in cities during a large portion or the whole of a year.

I may leave her to see that delicacy and modesty find place enough in her educational trainings, but let her also make sure that her girls have whatever chance she can afford to live out of doors, and to use the

[1] The demagogue urges his rights to much that he cannot have in any conceivable form of society. Let him ask for free libraries, free baths, free music, and, above all, free and ample play-grounds within easy reach. I wonder that the rich who endow colleges do not ever think of creating play-grounds. I wish I could open some large pockets by an appeal to hearts at large.

sports which develop the muscles and give tone and vigor. Even in our winters and in-doors, she can try to encourage active games such as shuttlecock and graces. I know of homes where the girls put on the gloves, and stand up with their brothers, and take gallantly the harmless blows which are so valuable a training in endurance and self-control.

I am reminded as I write that what I say applies and must apply chiefly to the leisure class; but in others there is a good deal of manual work done of necessity, and, after all, the leisure class is one which is rapidly increasing in America, and which needs, especially among its new recruits, the very kind of advice I am now giving. Severer games, such as cricket, which I see girls playing with their brothers, tennis, fencing, and even boxing, have for both sexes moral values. They teach, or some of them teach, endurance, contempt of little hurts, obedience to laws, control of temper, in a word, much that under ordinary circumstances growing girls do not get out of their gentler games. These are worth some risks, and such as they are need not trouble seriously the most careful mother. Neither need she fear for girls up to the age of puberty that they are any more liable to serious damage than are her boys.

When for her young daughters this time of change comes near, she may rest assured that their thorough physical training will have good results. Beyond this point it is hard to generalize, and, of course, the more

violent games, in which girl and boy are or may be as one, must cease. But each case must stand alone, and so be judged. There are plenty of healthy girls who may continue to row, to ride, to swim, to walk as before, but there are individual cases as to which advice is needed, although, as to all girls, it should be the rule that at certain times temperate exercise, lessened walks, and no dancing, riding, rowing, skating, or swimming should be allowed. Girls feel these restrictions less if they are so stringently taught from the outset as to become habits, and this is all I care to say.

Once past the critical years, and there is no reason why the mass of women should not live their own lives as men live theirs, except that always, in my opinion, the prudent woman will at certain times save herself. It is still true that even healthy women exercise too little. Our climate makes walking unpleasant, and to get in a good sweat in summer, or to wade through slush in winter, is hateful to the female soul. The English reproach us with this defect, and rightly, but do not estimate the difficulties of climate. Australian women walk little, and the English dame who comes to this country to live soon succumbs to the despotism of climate and abandons her habits of ample exercise afoot.

The in-door resources of women for chest and arm exertion are sadly few, and I think it fortunate when they are so situated as to have to do things in the

household which exact vigorous use of the upper extremities. Nothing is a better ally against nervousness or irritability in any one than either out-door exercise or pretty violent use of the muscles. I knew a nervously-inclined woman who told me that when she was losing self-control she was accustomed to seek her own room, and see how long she could keep up a shuttlecock without a failure. As to weather, again, I should say the worse the weather the better the exercise of a brisk walk; and my wise mother shall see that her girls do not dawdle about in-doors, but get a good tramp under all skies as a part of the habits of life. A sturdy struggle with a rough day blows the irritability and nervousness of the hour out of any but the truly sick, and I know as to some folks that the more they are out of doors the better they are morally as well as physically.

My ideal mother has looked on and seen her daughters grow up to be strong and vigorous. When the time came, she has not forgotten that she has had and has to deal with one of her own sex. During the years of their childhood she should understand, as concerns her girls, that to differentiate too largely their moral lessons from those of their brothers is unwise. Something as to this I have said in a former chapter as concerns the training of invalid children. It applies also to the well. The boy is taught self-control, repression of emotion, not to cry when hurt. Teach your girls these things, and you will in the end assure to

them that habitual capacity to suffer moral and physical ill without exterior show of emotion, which is so true an aid to the deeper interior control which subdues emotion at its sources, or robs it of its power to harm. Physical strength and an out-door life will make this lesson easy and natural. Be certain that weakness of body fosters and excuses emotional non-restraint, and that under long illness the most hardy man may become as nervously foolish as a spoiled child. Crave, then, for your girls strength and bodily power of endurance, and with this insist that the boy's code of emotional control shall be also theirs. But to do all this you must begin with them young, and not have to make each year undo the failure of the last. A dog-trainer once told me that it was a good thing to whip the smallest pups with a straw, and to teach them good habits, or try to do so, from birth. He put it strongly; but be sure that if we wish to build habits thoroughly into the mental and physical structure of childhood, we shall do well to begin early. As regards the out-door life, I shall have something more to say in another place, for much is within the reach of the thoughtful, which, with reasonable means, they can get for girls and women, and which yet they do not get; and there are many ways in which also we can so train our girls as to create for them constant and lasting bribes to be in the air.

The question of education is a more difficult one to handle. In childhood I do not see that our wise

mother need be anxious; but there comes a day when her girl is entering womanhood, when she will have to think of it. I have dealt with this question so fully of late that I have little here to add.[1] Our public schools are so organized that there is small place or excuse for indulgence, although, under wise management, this has been shown to be possible.[2] But there is a vast and growing class which is so situated that the mother can more largely control the studies and hours of her girls than can the parents of those who frequent our municipal schools.

A great change is on her child. Let her watch its evolution, and not with such apparent watchfulness as shall suggest the perils she is to look out for. We are all organized with a certain capital of nerve-force, and we cannot spend it with equal recklessness in all directions. If the girl bears well her gathering work,—that is, as one could wish,—we may let her alone, except that the wise mother will insist on lighter tasks and some rest of body at the time when nature is making her largest claim upon the vital powers. The least sign of physical failure should ring a graver alarm, and make the mother insist, at every cost, upon absence of lessons and reasonable repose. The matter is simple, and I have no more to say.

I am dealing now so entirely with the moral and physical aspects of a woman's life, and so distinctly from the medical point of view, that I do not feel

[1] "Wear and Tear," 6th ed., 1887. [2] Ibid., p. 54.

called upon to discuss, in all its aspects, the mooted question of the values and the perils of the higher education. At one time it was not open to women at all. Now it is within her reach. Our girl is well, and has passed, happily, over her time of development. Will the larger education which she so often craves subject her to risks such as are not present to the man,—risks of broken health and of its consequences? I wish to speak with care to the mother called upon to decide this grave question. I most honestly believe that the woman is the better in mind and morals for the larger training, better if she marries, and far better and happier if it chances that she does not. If we take the mass of girls, even of mature age, and give them the training commonly given to men, they run, I think, grave risks of being injured by it, and in larger proportion than do their brothers. Where it seems for other reasons desirable, it should be, I think, a question of individual selection. The majority of healthy young women ought to be able to bear the strain. Once in a female college, the woman goes on, and it is my own experience that, on the whole, she exhibits a far larger list of disastrous results from such work than do young men. If she be in the least degree nervous or not well, I, for one, should resolutely say no to all such claims; for let us bear in mind that the higher education is rarely to be used as men use it, to some definite end, and is therefore not, on the whole, so essential to her as to him. Few

women mean it as a way towards medicine, or even the upper ranks of teaching; and if they do, the least doubt as to health ought to make us especially unwilling to start an unseaworthy or uninsurable vessel upon an ocean of perilous possibilities. I wish that every woman could attain to the best that men have. I wish for her whatever in the loftiest training helps to make her as mother more capable, as wife more helpful; but I would on no account let the healthiest woman thus task her brain until she is at least nineteen. If she is to marry, and this puts it off until twenty-three, I consider that a gain not counted by the advocates of the higher education. I leave to others to survey the broad question of whether or not it will be well for the community that the mass of women should have a collegiate training. It is a wide and wrathful question, and has of late been very well discussed in Romanes's paper, and by Mrs. Lynn Linton. I think the conclusions of the former, on the whole, are just; but now, whatever be my views as to the larger interests of the commonwealth and the future mothers of our race, I must not forget that I am giving, or trying to give, what I may call individualized advice, from the physician's view, as to what is wisest.

Let us suppose that circumstances make it seem proper to consider an ambitious young woman's wish, and to let her go to a college for women. We presume that she has average health. But let no prudent mother suppose that in these collections of persons

of one sex her child will be watched as she has been at home. At no time will she more need the vigilant insight of a mother, and yet this can only be had through letters and in the holiday seasons. Nor can the mother always rely upon the girl to put forward what may cause doubt as to her power to go on with her work. I utterly distrust the statistics of these schools and their graduates as to health, and my want of reliance arises out of the fact that this whole question is in a condition which makes the teachers, scholars, and graduates of such colleges antagonistic to masculine disbelievers in a way and to a degree fatal to truth. I trust far more what I hear from the women who have broken down under the effort to do more than they were fit to do, for always, say what you may, it is the man's standard of endurance which is set before them, and up to which they try to live with all the energy which a woman's higher sense of duty imposes upon the ambitious ones of her sex. I have often asked myself what should be done to make sure that these schools shall produce the minimum amount of evil; what can be done to avoid the penalties inflicted by overstudy and class competitions, and by the emotional stimulus which women carry into all forms of work. Even if the doctor says this girl is sound and strong, her early months of college labor should be carefully watched. Above all, her eyes should be seen to, because in my experience some unsuspected disorder of vision has been fruitful of head-

aches and overstrain of brain, nor is it enough to know that at the beginning her eyes are good. Extreme use often evolves practical evils from visual difficulties at first so slight as to need or seem to need no correction.

The period of examinations is, too, of all others, the time of danger, and I know of many sad breakdowns due to the exaction and emotional anxieties of these days of competition and excitement.

Let me once for all admit that many girls improve in health at these colleges, and that in some of them the machinery of organization for care of the mental and physical health of their students seems to be all that is desirable. That it does not work satisfactorily I am sure, from the many cases I have seen of women who have told me their histories of defeat and broken health. The reason is clear. The general feeling (shall I say prejudices?) of such groups of women is bitterly opposed to conceding the belief held by physicians, that there are in the woman's physiological life disqualifications for such continuous labor of mind as is easy and natural to man. The public sentiment of these great schools is against any such creed, and every girl feels called upon to sustain the general view, so that this acts as a constant goad for such as are at times unfit to use their fullest possibility of energy. Modest girls, caught in the stern mechanism of a system, hesitate to admit reasons for lessened work or to exhibit signals of failure, and this I know to be

the case. The practical outcome of it all is that the eyes of home can never be too thoughtfully busy with those of their girls who have won consent to pursue, away from maternal care, the higher education of female colleges. I must have wearied that wise mother by this time, but, perhaps, I have given her more than enough to make her dread these trials.

I should say something as to the home-life of girls who go through the ordinary curriculum of city day schools were it not that I have of late so very fully reconsidered and rewritten my views as to this interesting question. I beg to refer my unsatisfied reader to a little book which, I am glad to know, has been helpful to many people in the last few years.[1]

[1] See "Wear and Tear," page 91.—Editor.

CHAPTER II

Convalescence

To my mind, there is nothing more pleasant than the gradual return to health after some revolutionary disease which has removed a goodly portion of the material out of which is formed our bodily frame. Nature does this happy work deftly in most cases, where, at least, no grave organic mischief has been left by the malady; and in the process we get such pleasantness as comes always from the easy exercise of healthy function. The change from good to better day by day is in itself delightful, and if you have been so happy, when well, as to have loved and served many, now is the good time when bun and biscuit come back to you,—shapely loaves of tenderness and gracious service. Flowers and books, and folks good and cheery to talk to, arrive day after day, and have for you a new zest which they had not in fuller health. Old tastes return and mild delights become luxuries, as if the new tissues in nerve and brain were not sated, like those of the older body in which they are taking their places.

When you are acutely ill, the doctor is business-

like and gravely kind; you want him in a way, are even anxious to see him for the relief he may bring, or the reassurance. But when you begin to feel as if you were a creature reborn, when you are safe and keenly enjoying the return of health, then it is that the morning visit is so delightful. You look for his coming and count on the daily chat. Should he chance to be what many of my medical brothers are,—educated, accomplished, with wide artistic and mental sympathies,—he brings a strong, breezy freshness of the outer world with him into the monastic life of the sick-room. One does not escape from being a patient because of being also a physician, and for my part I am glad to confess my sense of enjoyment in such visits, and how I have longed to keep my doctor at my side and to decoy him into a protracted stay. The convalescence he observes is for him, too, a pleasant thing. He has and should have pride in some distinct rescue, or in the fact that he has been able to stand by, with little interference, and see the disease run its normal course. I once watched a famous surgeon just after he had done a life-saving operation by dim candle-light. He stood smiling as the child's breath came back, and kept nodding his head with pleasant sense of his own competence. He was most like a Newfoundland dog I once had the luck to see pull out a small child from the water and on to a raft. When we came up, the dog was wagging his tail and standing beside the child with sense of self-approval

in every hair. The man wagged his head; the dog wagged his tail. Each liked well what he had done.

Thus it is that these half-hours by the convalescent's couch are full of subtle flattery for the doctor, and are apt to evolve the social best of him, as he notes the daily gain in strength and color, and listens, a tranquil despot, to one's pleas for this freedom or that indulgence. He turns over your books, suggests others, and, trained by a thousand such interviews, is likely enough a man interesting on many sides.

You selfishly enjoy his visit, not suspecting that you, too, are ignorantly helpful. He has been in sadder homes to-day, has been sorely tried, has had to tell grim truths, is tired, mind and body. The visit he makes you is for him a pleasant oasis: not all convalescents are agreeable. He goes away refreshed.

Most doctors have their share, and more, of illness, and are not, as I have seen stated, exempt from falling a prey to contagious maladies. Indeed, our records sadly show that this is not the case. Perhaps there is value for them and their future patients in the fact that they have been in turn patient and doctor and have served in both camps. Like other sick folks, the physician, as I know, looks forward, when ill, to the "morning visits" quite as anxiously as do any of those who have at times awaited his own coming.

That medical poet who has the joyous art of sending a ripple of mirth across the faces of the Anglo-Saxon world recognizes this fact in a cheerful poem,

called "The Morning Visit," and to which I gladly refer any of my readers who would like to know from the lips of Oliver Wendell Holmes what manner of delightful patient he must have been. I can fancy that he lost for his doctor many a pleasant hour.

It has seemed to me as if this wonderful remaking and regrowing of the tissues might be likened to a swift change from the weak childhood of disease to a sudden manhood of mind and body, in which is something of mysterious development elsewhere unmatched in life. Death has been minutely busy with your tissues, and millions of dead molecules are being restored in such better condition that not only are you become new in the best sense,—renewed, as we say,—but have gotten power to grow again, and, after your terrible typhoid or yellow fever, may win a half-inch or so in the next six months,—a doubtful advantage for some of us, but a curious and sure sign of great integral change.

The Greeks had a notion that once in seven years we are totally changed, the man of seven years back having in this time undergone an entire reconstruction. We know now that life is a constant death and a renewing,—that our every-day nutrition involves millions of molecular deaths and as many millions of births,—although to liken that which is so exquisitely managed, so undisturbingly done, to the coarser phenomena of death and birth is in a measure misleading.

Diseases such as typhoid fever, or a sharp local lung-trouble like pneumonia, really do make these minute changes approximate in abruptness to death. You weigh, let us say, one hundred and eighty pounds, and you drop in three weeks of a fever to one hundred and thirty pounds. The rest of you is dead. You have lost, as men say, fifty pounds, but your debt to disease, or to the blunders of civilization, for it is a case of creditor behind creditor, is paid. Your capital is much diminished, but you have come out of the trial with an amazing renovation of energy. This is the happy convalescence of the wholesome man. The other, the unlucky, fellow, does not get as safely through the cleansing bankruptcy of disease. The vicious, unlucky, or gouty grandfather appears on the books of that court in mysterious ways; his sins are pathologically visited on his child's child in this time of testing strain.

In the happy rush towards useful health, of a convalescence undisturbed by drawbacks, it is pleasant to think, as one lies mending, of the good day to come when my friend, recovering from typhoid or smallpox, shall send for his legal adviser and desire him as usual to bring suit against the city for damages and loss of time.

A little girl coughed in my face a hideous breath of membraneous decay. I felt at once a conviction of having been hit. Two days later I was down with her malady. She herself and two more of her family

owed their disease to the overflow of a neighbor's cesspool, and to them—poor, careless folk—Death dealt out a yet sterner retribution. There was a semi-civilized community beyond both. Should one go to law about it and test the matter of ultimate responsibility?

The amiability of convalescence is against it. One feels at peace with all the world, and so lies still, and reflects, "like souls that balance joy and pain," as to whether, on the whole, the matter has not had its valuable side. Certainly it has brought experiences not otherwise attainable.

Of the deeper and more serious insights a man gathers in the close approach of death and the swift, delicious return to safety and enlarging powers I hardly care to speak. To a physician, it is simply invaluable to have known in his own person pain, and to have been at close quarters with his constant enemy, and come off only wounded from the contest. In the anxiety about you is read anew what you look upon in other households every day, and perhaps with a too accustomed eye. And as to pain, I am almost ready to say that the physician who has not felt it is imperfectly educated. It were easy to dwell on this aspect of convalescence, but the mental state of one on the way to health is not favorable to connected thought. It is more grateful to lie in the sun, at the window, and watch the snow-birds on the ice-clad maples across the way, and now and then, day after

day, to jot down the thoughts that hop about one's brain like the friendly birds on the mail-clad twigs.

I make no apology for the disconnectedness of my reflections, but turn gladly to my records of the joyous and less grave observations which the passing hours brought me. Much as I have seen of disease and recoveries in all manner of men and women, the chance to observe them in my own person presented me with many little novel facts of interest. I find in my brief notes of this well-remembered time many records of the extraordinary acuteness won for a while by the senses.

Not dubious, but, alas! brief, is the gain which the sensorium acquires in this delightfully instructive passage out of death's shadow into certain sunshine. In my own case there was a rapid exfoliation, as we call it, of the skin, a loss and renewal of the outer layer of the cuticle. As a result of this, the sense of touch became for a while more acute, and was at times unpleasantly delicate. This seemed to me, as I first thought of its cause, a mere mechanical result, but I incline to suspect now that it was in a measure due to a true increase in capacity to feel, because I found also that the sister sense of pain was heightened. Slight things hurt me, and a rather gentle pinch gave undue discomfort. No doubt a part of this was owing to my having taken a good deal of opium, and then abruptly laid it aside. As I have elsewhere stated, this is apt to leave the nerves over-

sensitive for a season. The sense of hearing seemed to me to be less wide awake. I did not hear better, but high notes were for a while most unpleasant. The sense of taste grew singularly appreciative for a time, and made every meal a joyful occasion. The simplest food had distinct flavors. As for a glass of old Madeira,—a demijohned veteran of many ripening summers,—I recall to this day with astonishment the wonderful thing it was, and how it went over the tongue in a sort of procession of tastes, and what changeful bouquets it left in my mouth,—a strange variety of varying impressions, like the play of colors. In these days of more unspiritual health and coarser sense I am almost ashamed to say what pleasure I found in a dish of terrapin.

The function of smell became for me a source both of annoyance and, later on, of pleasure. I smelt things no one else could, and more things than I now can. The spring came early, and once out of doors the swiftly-flitting hours of sensory acuteness brought to me on every breeze nameless odors which have no being to the common sense,—a sweet, faint confusion of scents, some slight, some too intense,—a gamut of odors. Usually I have an imperfect capacity to apprehend smells, unless they are very positive, and it was a curious lesson to learn how intense for the time a not perfect function may become. Recent researches have shown that a drug like mercaptan may be used to test the limit of olfactory appreciation. We

have thus come to know that the capacity to perceive an odor is more delicate than our ability to recognize light. Probably it is an inconceivable delicacy of the sense of smell more than anything else which enables animals to find their way in the manner which seems to us so utterly mysterious. Yet, even in human beings, and not alone in a fortunate convalescence, do we see startling illustrations of the possibilities of this form of sensorial acuteness. I know of a woman who can by the smell at once tell the worn gloves of the several people with whom she is most familiar, and I also recall a clever choreic lad of fourteen who could distinguish when blindfold the handkerchiefs of his mother, his father, or himself, just after they have been washed and ironed. This test has been made over and over, to my satisfaction and surprise.

If a man could possess in the highest degree and in combination all of the possible extremes of sensory appreciativeness seen in disease, in hysteria, and in the hypnotic state, we should have a being of extraordinary capacities for observation. Taylor, in his "Physical Theory of Another World," a singular and half-forgotten book, has set this forth as conceivable of the beings of a world to come, and dwelt upon it in an ingenious and interesting way. For a long time even the inhalation of tobacco-smoke from a friend's cigar disturbed my heart, but one day, and it was, I fear, long before my physician, and he was wise, thought it prudent, I suddenly fell a prey to our lady

Nicotia. I had been reading listlessly a cruel essay in the *Atlantic* on the wickedness of smoking, and was presently seized with a desire to look at King James's famous "counterblast" against the weed. One is like a spoiled child at these times, and I sent off at once for the royal fulmination, which I found dull enough. It led to results the monarch could not have dreamed of. I got a full-flavored cigar, and had a half-hour of worshipful incense-product at the shrine of the brown-cheeked lady,—a thing to remember,—and which I had leisure enough to repent of in the sleepless night it cost me.

This new keenness of perception, of taste and touch, of smell and sound, belongs also, in the splendid rally which the body makes toward health, to the intellectual and imaginative sphere of activities. Something of the lost gifts of the fairy-land of childhood returns to us in fresh aptitude for strange, sweet castle-building, as we lie open-eyed, or in power to see, as the child sees, what we will when the eyes are closed,—

> Pictures of love and hate,
> Grim battles where no death is. Tournaments,
> Tall castles fair and garden terraces,
> Where the stiff peacock mocks the sunset light,
> And man and maiden whisper tenderly
> A shadowy love where no heart ever breaks,—
> Love whose to-morrow shall be as to-day.

With the increase of intellectual clearness, within a certain range, come, as with the brightened senses,

certain drawbacks, arising out of the fastidiousness which belongs to the changing man just at this time. Let him, therefore, be careful what novels he chooses, for of all times this is the one for fiction, when we are away from the contradictions of the fierce outer world, and are in an atmosphere all sun and flowers, and pleasant with generous service and thankful joy. Be careful what Scheherezade you invite to your couch. By an awful rule of this world's life, in all its phases, the sharper the zest of enjoyment, the keener the possible disgusts may be. I recommend Dumas's books at this crisis, but they should be read with acceptance; as stories, their value lying largely in this, that no matter who is murdered or what horror occurs, you somehow feel no more particular call upon your compassion than is made when you read afresh the terrible catastrophes of Jack the Giant-Killer.

A delightful master of style, Robert Louis Stevenson, in a recent enumeration of the books which have influenced him in life, mentions, as among the most charming of characterizations, the older Artagnan of the Vicomte de Bragelonne. I feel sure that on the sick-bed, of which he does not hesitate to speak, he must have learned, as I did, to appreciate this charming book. I made acquaintance then, also, with what seems to me, however, the most artistic of Dumas's works, and one so little known that to name it is a benefit, or may be, the Chevalier d'Harmenthal.

In the long road towards working health, I must have found, as my note-books show, immense leisure, and equal capacity to absorb a quantity of fiction, good and bad, and to find in some of it things about my own art which excited amused comment, and but for that would long ago have been forgotten. Among the stuff which I more or less listlessly read was an astonishing book called "Norwood." It set me to thinking, because in this book are recounted many things concerning sick or wounded folk, and those astonishing surgeons and nurses who are supposed to have helped them on to their feet again. The ghastly amusement which came to me out of the young lady in this volume, who amputates a man's leg, made me reflect a little about the mode in which writers of fiction have dealt with sick people and doctors. I lay half awake, and thought over this in no unkindly critical mood,

> "With now and then a merry thought,
> And now and then a sad one,"

until I built myself a great literary hospital, such as would delight Miss Nightingale. For in it I had a Scott ward, and a Dickens ward, and a Bulwer ward, and a Thackeray ward, with a very jolly lot of doctors, such as Drs. Goodenough and Firmin, with the Little Sister (out of Philip) and Miss Evangeline to take care of the patients, besides cells for Charles Reade's heroes and heroines, and the apothecary (out

of Romeo and Juliet) to mix more honest doses than he gave to luckless Romeo.

Should you wander with a critical doctor through those ghostly wards, you would see some queerer results of battle and fray than ever the doctors observe nowadays,—cases I should like to report, it might be: poisonings that would have bewildered Orfila, heart-diseases that would have astounded Corvisart, and those wonderful instances of consumption which render that most painful of diseases so delightful to die of—in novels. I have no present intention to weary my readers with a clinic in those crowded wards, but it will ease my soul a little if I may say my say in a general fashion about the utter absurdities of most of these pictures of disease and death-beds. In older times the sickness of a novel was merely a feint to gain time in the story or account for a non-appearance, and the doctor made very brief show upon the stage. Since, however, the growth of realism in literary art, the temptation to delineate exactly the absolute facts of disease has led authors to dwell too freely on the details of sickness. So long as they dealt in generalities their way was clear enough. Of old a man was poisoned and done for. To-day we deal in symptoms, and follow science closely in our use of poisons. Mr. Trollope's "Gemma" is an instance in point, where every one will feel that the spectacle of the heroine going seasick to death, owing to the administration of tartar emetic. is as disgusting and inartistic a

method as fiction presents. Why not have made it croton oil? More and worse of this hideous realism is to be found in About's books, such, for instance, as "Germaine"; but from which censure I like to exclude the rollicking fun of "Le nez d'un Notaire." As to the recent realistic atrocities of Zola, and even of Tolstoi, a more rare singer, if we exclude his disgusting drama of peasant life, I prefer to say little.

As to blunders in the science of poisons I say little. The novelist is a free lance, and chooses his own weapons; but I cannot help remarking that, if recent investigators are to be trusted, one unlucky female, at least, must be still alive, for a novelist relates that she was done to death by the internal taking of a dose of rattlesnake venom. I hope when I am to be poisoned this mode may be employed. She might as well have drunk a glass of milk. That book was a queer one to me after this catastrophe: the woman ought to be dead and could not be.

The difficulty of the modern novelist in giving symptoms and preserving the entire decorum of his pages has amused me a little. Depend upon it, he had best fight shy of these chronic illnesses: they make queer reading to a doctor who knows what sick people are; and above all does this advice apply to death-beds. As a rule, folks get very horrible at such times, and are a long while in dying, with few of their wits about them at the last. But in novels people die marvellously

possessed of their faculties; or, if they are shot, always jump into the air exactly as men never do in fact.

Just here, concerning wounds, a question occurs to me: The heroes who have to lose a limb—a common thing in novels since the war—always come back with one arm, and never with a lost leg. Is it more romantic to get rid of one than of the other?—considering also that a one-armed embrace of the weeping waiting lady-love must be so utterly unsatisfactory.

But enough of the patients. Among them I think I like Pendennis the best, and consider little Dombey and Nell the most delightfully absurd. And as to the doctors. Some of them have absolutely had the high promotion to be the heroes of a whole book. Had not one, nay, two, a novel to themselves? There is delightful Dr. Antonio, not enough of a doctor to call down on him my professional wrath. As to Dr. Good-enough, he has been in our family a long while,—on the shelf (God bless him!),—and attended, we remember, our friend Colonel Newcome in that death-bed matchless in art since Falstaff babbled life away. Yet, after all, he is not a doctor so much as a man charmingly drawn.

There are in novels many good portraits of lawyers, from Pleydell to Tulkinghorn. Whether fair or unjust as pictures, I am scarce able to judge, although I believe that some of them have been recognized by our legal brethren as sufficiently exact. While, however we have plenty of characters which

for his purpose the novelist labels M.D., there seems to have been some insuperable difficulty in evolving for artistic use a doctor who shall seem at home, as such, among the other characters of the novel,—one, at least, who shall appear to any reasonable degree like a doctor to those who really know the genus doctor thoroughly. Save Lydgate, no doctor in fiction answers this critical demand, or seems anything to me but a very stiff lay figure from the moment he is called upon to bring his art into the story, or to figure, except as an unprofessional personage.

Nor does this arise from poverty of types in the tribe of physicians. The training of a doctor's life produces the most varied effects for good or evil, as may chance, upon the human natures submitted to its discipline, so that I think any thoughtful medical man will tell you that there is a more notable individuality among his brethren in middle life than among most of the people he encounters. As for the novelist's effort—an inartistic one, it seems to me—to bring on his stage representations of some especial kind of doctor, I have only a grim smile to give, remembering Mr. Reade's grewsome medico in "Hard Cash,"—a personation meant, I suppose, to present to the public a certain irregular London doctor, but which, to the minds of most physicians, reads like an elaborate advertisement of the man in question.

Sir Bulwer Lytton's renderings of a homœopath and a water-cure specialist are open to the same charge,

and could only have been successful in the hands of a master.

There are at least two doctors in Balzac's novels. Rastignac, man of fashion and science, is drawn with the master's usual skill, but he is not a doctor. His art has no prominence. It is not shown how his peculiarities influenced his work, nor how his art, and its use, altered or modified the man. "The Country Doctor," by the same strong hand, is far more near my ideal of what this portraiture should be than any other known to me in French literature. The humorous aspects of a medical life in the provinces of France are nicely handled in Jules Sandeau's "Doctor Herbeau," but the study, however neat and pleasing, is slight.

Wander where you may, in the drama or the novel, you will still find, I think, that the character of the physician awaits in its interesting varieties competent portrayal.

Shakespeare has left us no finished portrait of a doctor. Molière caricatured him. Thackeray failed to draw him, and generally in novels he is merely a man who is labelled "Doctor." The sole exception known to me is the marvellous delineation of Lydgate in "Middlemarch." He is all over the physician, his manner, his sentiments, his modes of thought, but he stands alone in fiction. How did that great mistress of her art learn all of physicians which enabled her to leave us this amazingly truthful picture? Her life

gives us no clue, and when I asked her husband, George Lewes, to explain the matter, he said that he did not know, and that she knew no more of this than of how she had acquired her strangely complete knowledge of the low turf people she had drawn in the same book, and with an almost equal skill and truth to nature.

It were easy, I fancy, to point out how the doctor's life and training differ from those of all the other professions, and how this must act on peculiar individualities for the deepening of some lines and the erasure of others; but this were too elaborate a study for my present gossiping essay, and may await another day and a less lazy mood.

If any one should be curious to see what are the modifying circumstances in a physician's life which strongly tend to weaken or to reinforce character, I recommend a delightful little address, quite too brief, by Dr. Emerson, the son of the great essayist. It is unluckily out of print and difficult to obtain. If you would see in real lives what sturdy forms of personal distinctness the doctor may assume, there is no better way than to glance over some half-dozen medical biographies. Read, for instance, delightful John Brown's sketch of Sydenham and of his own father, or George Wilson's life of John Reid, the physiologist, whom community of suffering must have made dear to that gentle intelligence, and whose days ended in tragic horror such as sensational fiction may

scarcely match; or, for an individuality as well defined and more pleasing, read Pichot's life of Sir Charles Bell, or one of the most remarkable of biographies, Mr. Morley's life of Jerome Cardan.

I am reminded as I write how rare are the really good medical biographies. The autobiographies are better. Ambrose Paré's sketches of his own life, which was both eventful and varied, are scattered through his treatise on surgery, and he does not gain added interest in the hands of Malgaigne. Our own Sims's book about himself is worth reading, but is too realistic for the library table, yet what a strangely valuable story it is of the struggle of genius up to eminent success. But these are the heroes of a not unheroic profession, and I had almost forgotten to set among them, as a study of character, the life of the tranquil, high-minded Jenner, the country doctor who swept the scars of smallpox from the faces of the world of men, and beside him John Hunter, his friend, impulsive, quick of temper, enthusiastic, an intensely practical man of science. These are illustrations of men of the most varied types, whose works show their characteristics, and who would, in the end, I fancy, have been very different had fate set them other tasks in life, for if the sculptor makes the statue, we may rest quite sure that the statue he makes influences the man who made it.

These, I have said, are our heroes, but I still think there remains to be written the simple, honest, dutiful

story of an intelligent, thoughtful, every-day doctor, such as will pleasantly and fitly open to laymen some true conception of the life he leads, its cares, its trials, its influences on himself and others and its varied rewards. John Brown got closest to it in that sketch of his father, and in her delicately-drawn "Country Doctor" Miss Jewett has done us gentle service. But my doctor would differ somewhat in all lands, because nationality and social conventions have their influence on us as on other men, as any one may observe who compares the clergymen of the Episcopal Church in America with those of England.

The man who deals with the physician in fiction would have to consider this class of facts, for social conventions have assigned to the physician in England, at least, a very different position from that which he holds with us, where he has no social superior, and is usually in all small communities, and in some larger ones, the most eminent personage and the man of largest influence.

In the rage for novel characters the lady doctor has of late assumed her place in fiction. Lots of wives have been picked up among hospital nurses, especially since the Crimean war, and since other women than Sisters of Charity got into the business, and so made to seem probable this pleasing termination of an illness. There was a case well known to me where a young officer simulated delirium tremens in order to get near to a Sister of Charity. If ever you had seen

the lady, you would not have wondered at his madness; and should any author desire to utilize this incident, let him comprehend that the order of Sisters of Charity admits of its members leaving the ranks by marriage, theirs being a secular order; so that here are the chances for a story of the freshest kind. As for the lady doctor in fiction, her advantages would be awful to contemplate in sickness, when we are weak and fevered, and absurdly grateful for a newly-beaten pillow or a morsel of ice. But imagine the awful temptation of having your heart auscultated. Let us dismiss the subject while the vision of Béranger's Ange Gardienne flits before us as De Grandville drew her.

I have not now beside me Howells's "Doctor Breen's Practice." It is a remarkable attempt to do justice to a very difficult subject, for there are two physicians to handle, male and female, not, I think, after their kind. "Doctor Zay," by Miss Phelps, makes absurd a book which is otherwise very attractive. This young woman doctor, a homœopath, sets a young man's leg, and falls in love with him after a therapeutic courtship, in which he wooes and she prescribes.

The woman doctor is, I suspect, still available as material for the ambitious novelist, but let him beware how he deals with her.

CHAPTER III

Out-Door and Camp-Life for Women

A good many years ago I wrote a short paper.[1] meant to capture popular attention, under the title of "Camp Cure." I have reason to think that it was of use, but I have been led to regret that I did not see when it was written that what I therein urged as desirable for men was not also in a measure attainable by many women. I wish now to correct my error of omission, and to show not only that in our climate camp-life in some shape can be readily had, but also what are its joys and what its peculiar advantages.[2] My inclination to write anew on this subject is made stronger by two illustrations which recur to my mind, and which show how valuable may be an entire out-door life, and how free from risks even for the invalid. The lessons of the great war were not lost upon some of us, who remember the ease with which recoveries were made in tents, but single cases convince more than any statement of these large and generalized remembrances.

[1] See "Camp Cure," page 167.—Editor.

[2] "Nurse and Patient," and "Camp Cure," by S. Weir Mitchell. J. B. Lippincott Company, Philadelphia.

I knew a sick and very nervous woman who had failed in many hands to regain health of mind. I had been able to restore to her all she needed in the way of blood and tissue, but she remained, as before, almost helplessly nervous. Wealth made all resources easy, and yet I had been unable to help her. At last I said to her, "If you were a man I think I could cure you." I then told her how in that case I would ask a man to live. "I will do anything you desire," she said, and this was what she did. With an intelligent companion, she secured two well-known, trusty guides, and pitched her camp by the lonely waters of a Western lake in May, as soon as the weather allowed of the venture. With two good wall-tents for sleeping- and sitting-rooms, with a log hut for her men a hundred yards away and connected by a wire telephone, she began to make her experiment. A little stove warmed her sitting-room at need, and once a fortnight a man went to the nearest town and brought her books. Letters she avoided, and her family agreed to notify her at once of any real occasion for her presence. Even newspapers were shut out, and thus she began her new life. Her men shot birds and deer, and the lake gave her black bass, and with these and well-chosen canned vegetables and other stores she did well enough as to food. The changing seasons brought her strange varieties of flowers, and she and her friend took industriously to botany, and puzzled out their problems unaided save by books. Very soon rowing,

fishing, and, at last, shooting were added to her resources. Before August came she could walk for miles with a light gun, and could stand for hours in wait for a deer. Then she learned to swim, and found also refined pleasure in what I call word-sketching, as to which I shall by and by speak. Photography was a further gain, taken up at my suggestion. In a word, she led a man's life until the snow fell in the fall and she came back to report, a thoroughly well woman.

A more notable case was that of a New England lady, who was sentenced to die of consumption by at least two competent physicians. Her husband, himself a doctor, made for her exactly the same effort at relief which was made in the case I have detailed, except that when snow fell he had built a warm log cabin, and actually spent the winter in the woods, teaching her to live out in the air and to walk on snow-shoes. She has survived at least one of her doctors, and is, I believe, to this day a wholesome and vigorous wife and mother.

What large wealth did to help in these two cases may be managed with much smaller means. All through the White Mountains, in summer, you may see people, a whole family often, with a wagon, going from place to place, pitching their tents, eating at farm-houses or hotels, or managing to cook at less cost the food they buy. Our sea-coast presents like chances. With a good tent or two, which costs little,

you may go to unoccupied beaches, or by inlet or creek, and live for little. I very often counsel young people to hire a safe open or decked boat, and, with a good tent, to live in the sounds along the Jersey coast, going hither and thither, and camping where it is pleasant, for, with our easy freedom as to land, none object. When once a woman—and I speak now of the healthy—has faced and overcome her dread of sun and mosquitoes, the life becomes delightful. The Adirondacks, the Alleghanies, and the Virginia mountains afford like chances, for which, as these are in a measure remote, there must be a somewhat more costly organization. I knew well a physician who every summer deserted his house and pitched tents on an island not over three miles from home, and there spent the summer with his family, so that there are many ways of doing the same thing.

As to the question of expense, there is no need to say much. All over our sparsely-inhabited land places wild enough are within easy reach, and the journey to reach them need not be long. Beyond this, tent-life is, of course, less costly than the hotel or boarding-house, in which such numbers of people swelter through their summers. As to food, it is often needful to be within reach of farm-houses or hotels, and all kind of modifications of the life I advise are possible.

As to inconveniences, they are, of course, many, but, with a little ingenuity, it is easy to make tent-life

comfortable, and none need dread them. Any book on camp-life will tell how to meet or avoid them, and to such treatises I beg to refer the reader who wishes to experiment on this delightful mode of gypsying.

The class of persons who find it easy to reach the most charming sites and to secure the help of competent guides is, as I have said in another place, increasing rapidly. The desire also for such a life is also healthfully growing, so that this peculiarly American mode of getting an outing is becoming more and more familiar. It leads to our young folks indulging in all sorts of strengthening pursuits. It takes them away from less profitable places, and the good it does need not be confined to the boys. Young women may swim, fish, and row like their brothers, but the life has gains and possibilities, as to which I would like to say something more. In a well-ordered camp you may be sure of good food and fair cooking. To sleep and live in the air is an insurance against what we call taking cold. Where nature makes the atmospheric changes, they are always more gradual and kindly than those we make at any season when we go from street to house or house to street.

My brothers during the war always got colds when at home on leave, and those who sleep in a chinky cabin or tent soon find that they do not suffer and that they have an increasing desire for air and openness.

To live out of doors seems to be a little matter in the way of change, and that it should have remark-

able moral and intellectual values does not appear credible to such as have not had this experience.

Yet, in fact, nothing so dismisses the host of little nervousnesses with which house-caged women suffer as this free life. Cares, frets, worries, and social annoyances disappear, and in the woods and by the waters we lose, as if they were charmed away, our dislikes or jealousies, all the base, little results of the struggle for bread or place. At home, in cities, they seem so large; here, in the gentle company of constant sky and lake and stream, they seem trivial, and we cast them away as easily as we throw aside some piece of worn-out and useless raiment.

The man who lives out of doors awhile acquires better sense of moral proportions, and thinks patiently and not under stress, making tranquil companions of his worthy thoughts. This is a great thing, not to be hurried. There seems to me always more time out of doors than in houses, and if you have intellectual problems to settle, the cool quiet of the woods or the lounging comfort of the canoe, or to be out under " the huge and thoughtful night," has many times seemed to me helpful. One gets near realities out of doors. Thought is more sober; one becomes a better friend to one's self.

As to the effect of out-door life on the imaginative side of us, much may be said. Certainly some books get fresh flavors out of doors, and you see men or women greedily turn to reading and talking over verse

who never dream of it when at home. I am tempted to mention the poets, and even the other authors who gain a kindly rubric for their work from the gentle company of lake and wood and stream. I should frankly name Walt Whitman and Thoreau, and pause pretty soon in wonder at the small number of poets who suggest out-door life as their source of inspiration. A good many of them—read as you lie in a birch canoe or seated on a stump in the woods—shrink to well-bred, comfortable parlor bards, who seem to you to have gotten their nature-lessons through plate-glass windows. The test is a sharp one, and will leave out some great names and let in some hardly known, or almost forgotten. Books to be read out of doors would make a curious catalogue, and would vary, as such lists must, with every thoughtful reader, while some would smile, perhaps with reason, at the idea of any such classification. Certainly all would name Wordsworth, and a few would add Clough, whilst the out-door plays of Shakespeare would come in, and we should soon be called on to feel that for this sort of congenial open-air poetic company we have still to fall back on the vast resources of English verse. Somehow, as yet, our own poets have not gotten fully into imaginative relation with what is peculiar in our own flowers, trees, and skies. This does not lessen our joy in the masters of English verse, because, of course, much of what they have sung has liberal application in all lands: yet is there something which we lose in them for lack of

familiar knowledge of English lanes and woods, of English flowers and trees. A book of the essentially American nature—poems found here and there in many volumes—would be pleasant, for surely we have had no one poet as to whom it is felt that he is absolutely desirable as the interpretive poetic observer who has positive claims to go with us as a friendly bookmate in our wood or water wanderings. I have shrunk, as will have been seen, from the dangerous venture of enlarging my brief catalogue. What I have just now spoken of as one's bookmates will appear in very different lights according to the surroundings in which we seek to enjoy their society. If, as to this matter, any one doubts me, and has the good luck to camp out long, and to have a variety of books of verse and prose, very soon, if dainty of taste, he will find that the artificial flavoring of some books is unpleasantly felt; but, after all, one does not read very much when living thus outside of houses. Books are then, of course, well to have, but rather as giving one texts for thoughts and talk than as preachers, counsellors, jesters, or friends.

In my own wood-life or canoe journeys I used to wonder how little I read or cared to read. One has nowadays many resources. If you sketch, no matter how badly, it teaches and even exacts that close observation of nature which brings in its train much that is to be desired. Photography is a means of record, now so cheaply available as to be at the disposal of

all, and there is a great charm of a winter evening in turning over sketch or photograph to recall anew the pleasant summer days. Beyond all this, there is botany. I knew a lady who combined it happily and ingeniously with photography, and so preserved pictures of plants in their flowering state. When you are out under starry skies with breadth of heaven in view, astronomy with an opera-glass—and Galileo's telescope was no better—is an agreeable temptation which the cheap and neat charts of the skies now to be readily obtained make very interesting.

I should advise any young woman, indeed, any one who has the good chance to live a camp-life, or to be much in the country, to keep a diary, not of events but of things. I find myself that I go back to my old note-books with increasing pleasure.

To make this resource available something more than the will to do it is necessary. Take any nice young girl, who is reasonably educated, afloat in your canoe with you, and ask her what she sees. As a rule she has a general sense that yonder yellow bank, tree-crowned above the rippled water, is pleasant. The sky is blue, the sun falling behind you. She says it is beautiful and has a vague sense of enjoyment, and will carry away with her little more than this. Point out to her that the trees above are some of them deciduous poplars, or maples, and others sombre groups of pines and silky tamarack with a wonder of delicate tracery. Show her that the sun against the sloped yellow bank

has covered the water with a shining changeful orange light, through which gleam the mottled stones below, and that the concave curve of every wave which faces us concentrates for the eye an unearthly sapphire the reflex of the darkening blue above us. Or a storm is on us at the same place. She is fearless as to the ducking from which even her waterproof will hardly protect. The clouds gather, the mists trail on the hills, ragged mosses on the trees hang in wet festoons of gray, and look in the misty distance like numberless cascades. It rains at last, a solid down-pour; certain tree-trunks grow black, and the shining beech and birch and poplar get a more vivid silver on their wet boles. The water is black like ink. It is no longer even translucent, and overhead the red scourges of the lightning fly, and the great thunder-roar of smitten clouds rolls over us from hill to hill.

All these details you teach her and more, and paddle home with a mental cargo of fresh joys and delicious memories. My young friend is intelligent and clever, but she has never learned to observe. If she wants to know how, there is a book will help her. Let her take with her Ruskin's "Modern Painters." It will teach her much, not all. Nor do I know of any other volume which will tell her more.[1] Despite its faults, it has so many lessons in the modes of minute

[1] "Frondes Agrestes," Ruskin, is a more handy book than "Modern Painters," but is only selections from the greater volumes recommended. "Deucalion" is yet harder reading, but will repay the careful reader.

study of outside nature that it becomes a valuable friend. Although ostensibly written to aid artistic criticism, it does far more than this and yet not all. Other books which might seem desirable are less so because they are still more distinctly meant to teach or assist artists or amateurs. What is yet wanted is a little treatise on the methods of observing exterior nature. Above all it should be adapted to our own woods, skies, and waters. What to look for as a matter of pleasure, and how to see and record it, is a thing apart from such observation as leads to classification, and is scientific in its aims. It is somewhat remote also from the artist's study, which is a more complex business, and tends to learn what can be rendered by pencil or brush and what cannot. Its object at first is merely to give intelligent joy to the senses, to cultivate them into acuteness, and to impress on the mind such records as they ought to give us at their best.

Presuming the pupil to be like myself, powerless to use the pencil, she is to learn how to put on paper in words what she sees. The result will be what I may call *word-sketches.* Observe these are not to be for other eyes. They make her diary of things seen and worthy of note. Neither are they to be efforts to give elaborate descriptions. In the hands of a master, such use of words makes a picture in which often he sacrifices something, as the artist does, to get something else, and strives chiefly to leave on the mind one dominant emotion just as did the scene thus por-

trayed. A few words may do this or it may be an elaborate work. The gift is a rare and great one. The word-paintings of Ruskin hang forever in one's mental gallery, strong, true, poetical, and capable of stirring you as the scenes described would have done, nay, even more, for a great word-master has stood interpretative between you and nature.

Miss Brontë was mistress of this art. Blackmore has it also. In some writers it is so lightly managed as to approach the sketch, and is more suggestive than fully descriptive. To see what I mean read the first few chapters of "Miss Angel," by Anna Thackeray. But a sketch by a trained and poetical observer is one thing; a sketch by a less gifted person is quite another. My pupil must be content with the simplest, most honest, unadorned record of things seen. Her training must look to this only.

What she should first seek to do is to be methodical and accurate and by and by fuller. If wise she will first limit herself to small scenes, and try to get notes of them somewhat in this fashion. She is, we suppose, on the bank of a stream. Her notes run as follows:

Date, time of day, place. Hills to either side and their character; a guess at their height; a river below, swift, broken, or placid; the place of the sun, behind, in front, or overhead. Then the nature of the trees and how the light falls on them or in them, according to their kind. Next come color of wave and

bank and sky, with questions as to water-tints and their causes. Last of all, and here she must be simple and natural, what mood of mind does it all bring to her, for every landscape has its capacity to leave you with some general sense of its awe, its beauty, its sadness, or its joyfulness.

Try this place again at some other hour, or in a storm, or under early morning light, and make like notes. If she should go on at this pleasant work, and one day return to the same spot, she will wonder how much more she has now learned to see.

Trees she will find an enchanting study. Let her take a group of them and endeavor to say on paper what makes each species so peculiar. The form, color, and expression of the boles are to be noted. A reader may smile at the phrase "expression," but look at a tattered old birch, or a silvery young beech-bole, "modest and maidenly, clean of limb," or a lightning-scarred pine. Tree-study has advantages because it is always within reach. The axe has been so ruthlessly wielded that you must go far into the woods to get the best specimens of the pine, and the forests about our Maine lakes and in the Adirondacks have been sadly despoiled of their aristocrats. To see trees at their savage best one must go South, and seek the white-oaks of Carolina, the cypress of Florida, but the parks of Philadelphia and Baltimore afford splendid studies, and so also do the mountains of Virginia. Private taste and enterprise is saving already much that will

be a joy to our children. A noble instance is the great wild park with which Colonel Parsons has protected the Natural Bridge in Virginia. I saw there an arbor-vitæ said by botanists to be not less than nine hundred years old, a chestnut twenty-six feet in girth at the height of my shoulders, and oaks past praise. But trees are everywhere, and if my observant pupil likes them, let her next note the mode in which the branches spread and their proportion to the trunk. State it all in the fewest words. It is to be only a help to memory. Then she comes to the leaf forms and the mode in which they are massed, their dulness or translucency, how sunshine affects their brilliancy, as it is above or falls laterally at morn or eve. Perhaps she will note, too, on which the gray moss grows, and just in what forms, and how the mosses or lichens gather on the north side of trees and on what trees.

I may help my pupil if, like an artist teacher, I give one or two illustrations, copied *verbatim* from my note-books. The first was written next morning, as it is a brief record of a night scene.

Time, July 21, 1887, 9 P.M. Ristigouche River, New Brunswick, Canada. Black darkness. Hill outlines nearly lost in sky. River black, with flashing bits of white rapid; banks have grayish rocks, and so seem to be nearer than the dark stream limits. Sky looks level with hill-tops. Water seems to come up close. Effect of being in a concave valley of water, and all things draw in on me. Sense of awe. Camp-

fire's red glare on water. Sudden opening lift of sky. Hills recede. Water-level falls. This is a barren, unadorned sketch, but it seems to tell the thing.

Or this, for a change. Newport. A beach. Time, August 1, 1887; 4 P.M. About me cleft rocks, cleavage straight through the embedded pebbles. Tones ruddy browns and grays. Gray beach. Sea-weed in heaps, deep pinks and purples. Boisterous waves, loaded with reddish sea-weed, blue, with white crests, torn off in long ribbons by wind. Curious reds and blues as waves break, carrying sea-weed. Fierce gale off land. Dense fog, sun above it and to right. Everywhere yellow light. Sea strange dingy yellow. Leaves an unnatural green. Effect weird. Sense of unusualness.

Of course, such study of nature leads the intelligent to desire to know why the cleaved rock shows its sharp divisions as if cut by a knife, why yellow light gives such strangeness of tints, and thus draws on my pupil to larger explanatory studies. So much the better.

If when she bends over a foot-square area of mouldered tree-trunk, deep in the silence of a Maine wood, she has a craving to know the names and ways of the dozen mosses she notes, of the minute palm-like growths, of the odd toadstools, it will not lessen the joy this liliputian representation of a tropical jungle gives to her. Nor will she like less the splendor of sunset tints on water to know the secrets of the pleasant tricks of refraction and reflection.

I do not want to make too much of a small matter. No doubt many people do this kind of thing, but in most volumes of travel it is easy to see that the descriptions lack method, and show such want of training in observation as would not be noticeable had their authors gone through the modest studies I am now inviting my pupil to make.

Her temptation will be to note most the large, the grotesque, or the startling aspects of nature. In time these will be desirable as studies, but at first she must try smaller and limited sketches. They are as difficult, but do not change as do the grander scenes and objects. I knew a sick girl, who, bedfast for years, used to amuse herself with what her windows and an opera-glass commanded in the way of sky and foliage. The buds in spring-time, especially the horse-chestnuts, were the subject of quite curious notes, and cloud-forms an endless source of joy and puzzle to describe. One summer a great effort was made, and she was taken to the country, and a day or two later carried down near a brook, where they swung her hammock. I found her quite busy a week later, and happy in having discovered that the wave-curves over a rock were like the curves of some shells. My pupil will soon learn, as she did, that a good opera-glass is indispensable. Let any one who has not tried it look with such a glass at sunset-decked water in motion. I am sure they will be startled by its beauty, and this especially if the surface be seen from a boat, because

merely to look down on water is to make no acquaintance with its loveliness. A scroll of paper to limit the view and cut out side-lights also intensifies color.

The materials my pupil is to use are words, and words only. Constant dissatisfaction with the little they can tell us is the fate of all who use them. The sketcher, the great word-painter, and even the poet feels this when, like Browning, he seems so to suffer from their weakness as to be troubled into audacious employment of the words that will not obey his will, torment them as he may. Yet, as my pupil goes on, she will find her vocabulary growing, and will become more and more accurate in her use and more ingenious in her combination of words to give her meaning. As she learns to feel strongly—for she will in time—her love will give her increasing power both to see and to state what she sees, because this gentle passion for nature in all her moods is like a true-love affair, and grows by what it feeds upon.

When we come to sketch in words the rare and weird effects, the storm, the sunsets that seem not of earth, the cascade, or the ravage of the "windfall," it is wise not to be lured into fanciful word-painting, and the temptation is large. Yet the simplest expression of facts is then and for such rare occasions the best, and often by far the most forceful.

I venture, yet again, to give from a note-book of last year a few lines as to a sunset. I was on a steam-

yacht awaiting the yachts which were racing for the Newport cup.

August 6, time, sunset; level sea; light breeze; fire-red sun on horizon; vast masses of intensely-lighted scarlet clouds; a broad track of fiery red on water; three yachts, with all sail set, coming over this sea of red towards us. Their sails are a vivid green. The vast mass of reds and scarlets give one a strange sense of terror as if something would happen. I could go on to expand upon "this color such as shall be in heaven," and on the sails which seemed to be green, but for the purpose of a sketch and to refresh the traitor memory in the future, the lines I wrote are enough and are yet baldly simple.

Out of this practice grow, as I have said, love of accuracy, larger insights, careful valuation of words, and also an increasing and more intelligent love of art in all its forms; nor will all these gains in the power to observe be without practical value in life.

I trust that I have said enough to tempt others to try each in their way to do what has been for me since boyhood a constant summer amusement.

Part II

WEAR AND TEAR
NURSE AND PATIENT
CAMP CURE

BY

S. WEIR MITCHELL, M.D.

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CHAPTER I

WEAR AND TEAR,
or Hints for the Overworked

MANY years ago[1] I found occasion to set before the readers of *Lippincott's Magazine* certain thoughts concerning work in America, and its results. Somewhat to my surprise, the article attracted more notice than usually falls to the share of such papers, and since then, from numerous sources, I have had the pleasure to learn that my words of warning have been of good service to many thoughtless sinners against the laws of labor and of rest. I have found, also, that the views then set forth as to the peculiar difficulties of mental and physical work in this country are in strict accordance with the personal experience of foreign scholars who have cast their lots among us; while some of our best teachers have thanked me for stating, from a doctor's standpoint, the evils which their own experience had taught them to see in our present mode of tasking the brains of the younger girls.

I hope, therefore, that I am justified in the belief

[1] In 1871.

that in its new and larger form my little tract may again claim attention from such as need its lessons. Since it was meant only for these, I need not excuse myself to physicians for its simplicity; while I trust that certain of my brethren may find in it enough of original thought to justify its reappearance, as its statistics were taken from manuscript notes and have been printed in no scientific journal.

I have called these Hints WEAR and TEAR, because this title clearly and briefly points out my meaning. *Wear* is a natural and legitimate result of lawful use, and is what we all have to put up with as the result of years of activity of brain and body. *Tear* is another matter: it comes of hard or evil usage of body or engine, of putting things to wrong purposes, using a chisel for a screw-driver, a penknife for a gimlet. Long strain, or the sudden demand of strength from weakness, causes tear. Wear comes of use; tear of abuse.

The sermon of which these words are the text has been preached many times in many ways to congregations for whom the Dollar Devil had always a more winning eloquence. Like many another man who has talked wearily to his fellows with an honest sense of what they truly need, I feel how vain it is to hope for many earnest listeners. Yet here and there may be men and women, ignorantly sinning against the laws by which they should live or should guide the lives of others, who will perhaps be willing to heed what one

unbiased thinker has to say in regard to the dangers of the way they are treading with so little knowledge as to where it is leading.

The man who lives an outdoor life, who sleeps with the stars visible above him, who wins his bodily subsistence at first-hand from the earth and waters, is a being who defies rain and sun, has a strange sense of elastic strength, may drink if he likes, and may smoke all day long, and feel none the worse for it. Some such return to the earth for the means of life is what gives vigor and developing power to the colonist of an older race cast on a land like ours. A few generations of men living in such fashion store up a capital of vitality which accounts largely for the prodigal activity displayed by their descendants, and made possible only by the sturdy contest with Nature which their ancestors have waged. That such a life is still led by multitudes of our countrymen is what alone serves to keep up our pristine force and energy. Are we not merely using the interest on these accumulations of power, but also wastefully spending the capital? From a few we have grown to millions, and already in many ways the people of the Atlantic coast present the peculiarities of an old nation. Have we lived too fast? The settlers here, as elsewhere, had ample room, and lived sturdily by their own hands, little troubled for the most part with those intense competitions which make it hard to live nowadays and embitter the daily bread of life. Neither had they the

thousand intricate problems to solve which perplex those who struggle to-day in our teeming city hives. Above all, educational wants were limited in kind and in degree, and the physical man and woman were what the growing state most needed.

How much and what kind of good came of the gradual change in all these matters we well enough know. That in one and another way the cruel competition for the dollar, the new and exacting habits of business, the racing speed which the telegraph and railway have introduced into commercial life, the new value which great fortunes have come to possess as means toward social advancement, and the overeducation and overstraining of our young people, have brought about some great and growing evils, is what is now beginning to be distinctly felt. I should like, therefore, at the risk of being tedious, to reëxamine this question—to see if it be true that the nervous system of certain classes of Americans is being sorely overtaxed—and to ascertain how much our habits, our modes of work, and, haply, climatic peculiarities, may have to do with this state of things. But before venturing anew upon a subject which may possibly excite controversy and indignant comment, let me premise that I am talking chiefly of the crowded portions of our country, of our great towns, and especially of their upper classes, and am dealing with those higher questions of mental hygiene of which in general we hear but too little. If the strictures I have to make applied

as fully throughout the land—to Oregon as to New England, to the farmer as to the business man, to the women of the artisan class as to those socially above them—then indeed I should cry, God help us and those that are to come after us! Owing to causes which are obvious enough, the physical worker is being better and better paid and less and less hardly tasked, while just the reverse obtains in increasing ratios for those who live by the lower form of brain work; so that the bribe to use the hand is growing daily, and pure mechanical labor, as opposed to that of the clerk, is being "leveled upward" with fortunate celerity.

Before attempting to indicate certain ways in which we as a people are overtaxing and misusing the organs of thought, I should be glad to have the privilege of explaining the terms which it is necessary to use, and of pointing out some of the conditions under which mental labor is performed.

The human body carries on several kinds of manufacture, two of which—the evolution of muscular force or motion, and intellection with all moral activities—alone concern us here. We are somewhat apt to antagonize these two sets of functions, and to look upon the latter, or brain labor, as alone involving the use or abuse of the nervous system. But every blow on the anvil is as distinctly an act of the nerve centers as are the highest mental processes. If this be so, how or why is it that excessive muscular exertion—I mean such as is violent and continued—does not cause the

same appalling effects as may be occasioned by a like abuse of the nerve-organs in mental actions of various kinds? This is not an invariable rule, for, as I may point out in the way of illustration hereafter, the centers which originate or evolve muscular power do sometimes suffer from undue taxation; but it is certainly true that when this happens, the evil result is rarely as severe or as lasting as when it is the organs of mental power that have suffered.

In either form of work, physical or mental, the will acts to start the needed processes, and afterwards is chiefly regulative. In the case of bodily labor, the spinal nerve centers are most largely called into action. Where mental or moral processes are involved, the active organs lie within the cranium. As I said just now, when we talk of an overtaxed nervous system it is usually the brain we refer to, and not the spine; and the question therefore arises, Why is it that an excess of physical labor is better borne than a like excess of mental labor? The simple answer is, that mental overwork is harder because as a rule it is closet or counting room or at least indoor work—sedentary, in a word. The man who is intensely using his brain is not collaterally employing any other organs, and the more intense his application the less locomotive does he become. On the other hand, however a man abuses his powers of motion in the way of work, he is at all events encouraging that collateral functional activity which mental labor discourages: he is quick-

ening the heart, driving the blood through unused channels, hastening the breathing and increasing the secretions of the skin—all excellent results, and, even if excessive, better than a too incomplete use of these functions.

But there is more than this in the question. We do not know as yet what is the cost in expended material of mental acts as compared with motor manifestations, and here, therefore, are at fault; because, although it seems so much slighter a thing to think a little than to hit out with the power of an athlete, it may prove that the expenditure of nerve material is in the former case greater than in the latter.

When a man uses his muscles, after a time comes the feeling called fatigue—a sensation always referred to the muscles, and due most probably to the deposit in the tissues of certain substances formed during motor activity. Warned by this weariness, the man takes rest—may indeed be forced to do so; but, unless I am mistaken, he who is intensely using the brain does not feel in the common use of it any sensation referable to the organ itself which warns him that he has taxed it enough. It is apt, like a well-bred creature, to get into a sort of exalted state under the stimulus of need, so that its owner feels amazed at the ease of its processes and at the sense of *wide-awakefulness* and power that accompanies them. It is only after very long misuse that the brain begins to have means of saying, "I have done enough;" and at this

stage the warning comes too often in the shape of some one of the many symptoms which indicate that the organ is already talking with the tongue of disease.

I do not know how these views will be generally received, but I am sure that the personal experience of many scholars will decide them to be correct; and they serve to make clear why it is that men may not know they are abusing the organ of thought until it is already suffering deeply, and also wherefore the mind may not be as ruthlessly overworked as the legs or arms.

Whenever I have closely questioned patients or men of studious habits as to this matter, I have found that most of them, when in health, recognized no such thing as fatigue in mental action, or else I learned that what they took for this was merely that physical sense of being tired which arises from prolonged writing or constrained positions. The more, I fancy, any healthy student reflects on this matter the more clearly will he recognize this fact, that very often when his brain is at its clearest, he pauses only because his back is weary, his eyes aching, or his fingers tired.

This most important question, as to how a man shall know when he has sufficiently tasked his brain, demands a longer answer than I can give it here; and, unfortunately, there is no popular book since Ray's clever and useful " Mental Hygiene," and Feuchtersleben's " Dietetics of the Soul," both out of print, which

deals in a readable fashion with this or kindred topics.[1] Many men are warned by some sense of want of clearness or ease in their intellectual processes. Others are checked by a feeling of surfeit or disgust, which they obey or not as they are wise or unwise. Here, for example, is in substance the evidence of a very attentive student of his own mental mechanism, whom we have to thank for many charming products of his brain. Like most scholars, he can scarcely say that he ever has a sense of "brain tire," because cold hands and feet and a certain restlessness of the muscular system drive him to take exercise. Especially when working at night, he gets after a time a sense of disgust at the work he is doing. "But sometimes," he adds, "my brain gets going, and is to be stopped by none of the common plans of counting, repeating French verbs, or the like." A well-known poet describes to me the curious condition of excitement into which his brain is cast by the act of composing verse, and thinks that the happy accomplishment of his task is followed by a feeling of relief, which shows that there has been high tension.

One of our ablest medical scholars reports himself to me as having never been aware of any sensation

[1] See, now, "Brain-Work and Overwork," by H. C. Wood, M.D.; also, "Mental Overwork and Premature Disease among Public and Professional Men," by Ch. K. Mills, M.D.; also, "Overwork and Sanitation in Public Schools, with Remarks on the Production of Nervous Disease and Insanity," by Ch. K. Mills, M.D., *Annals of Hygiene, September, 1886.*

in the head, by which he could tell that he had worked enough, up to a late period of his college career, when, having overtaxed his brain, he was restricted by his advisers to two or three hours of daily study. He thus learned to study hard, and ever since has been accustomed to execute all mental tasks at high pressure under intense strain and among the cares of a great practice. All his mind work is, however, forced labor, and it always results in a distinct sense of cerebral fatigue—a feeling of pressure, which is eased by clasping his hands over his head; and also there is desire to lie down and rest.

"I am not aware," writes a physician of distinction, "that, until a few years ago, I ever felt any sense of fatigue from brain work which I could refer to the organ employed. The longer I worked the clearer and easier my mental processes seemed to be, until, during a time of great sorrow and anxiety, I pushed my thinking organs rather too hard. As a result, I began to have headache after every period of intellectual exertion. Then I lost power to sleep. Although I have partially recovered, I am now always warned when I have done enough, by lessening ease in my work, and by a sense of fullness and tension in the head." The indications of brain tire, therefore, differ in different people, and are more and more apt to be referred to the thinking organ as it departs more and more from a condition of health. Surely a fuller record of the conditions under which men of note are using their

mental machinery would be everyway worthy of attention.

Another reason why too prolonged use of the brain is so mischievous is seen in a peculiarity, which is of itself a proof of the auto-activity of the vital acts of the various organs concerned in intellection. We sternly concentrate attention on our task, whatever it be; we do this too long, or under circumstances which make labor difficult, such as during digestion or when weighted by anxiety. At last we stop and propose to find rest in bed. Not so, says the ill-used brain, now morbidly wide awake; and whether we will or not, the mind keeps turning over and over the work of the day, the business or legal problem, or mumbling, so to speak, some wearisome question in a fashion made useless by the denial of full attention. Or else the imagination soars away with the unrestful energy of a demon, conjuring up an endless procession of broken images and disconnected thoughts, so that sleep is utterly banished.

I have chosen here as examples men whose brains are engaged constantly in the higher forms of mental labor; but the difficulty of arresting at will the overtasked brain belongs more or less to every man who overuses this organ, and is the well-known initial symptom of numerous morbid states. I have instanced scholars and men of science chiefly, because they, more than others, are apt to study the conditions under which their thinking organs prosper or falter in their work,

and because from them have we had the clearest accounts of this embarrassing condition of automatic activity of the cerebral organs. Few thinkers have failed, I fancy, to suffer in this way at some time, and with many the annoyance is only too common. I do not think the subject has received the attention it deserves, even from such thorough believers in unconscious cerebration as Maudsley. As this state of brain is fatal to sleep, and therefore to needful repose of brain, every sufferer has a remedy which he finds more or less available. This usually consists in some form of effort to throw the thoughts off the track upon which they are moving. Almost every literary biography has some instance of this difficulty, and some hint as to the sufferer's method of freeing his brain from the despotism of a ruling idea or a chain of thought.

Many years ago I heard Mr. Thackeray say that he was sometimes haunted, when his work was over, by the creatures he himself had summoned into being, and that it was a good corrective to turn over the pages of a dictionary. Sir Walter Scott is said to have been troubled in a similar way. A great lawyer, whom I questioned lately as to this matter, told me that his cure was a chapter or two of a novel, with a cold bath before going to bed; for, said he quaintly, "You never take out of a cold bath the thoughts you take into it." It would be easy to multiply such examples.

Looking broadly at the question of the influence of

excessive and prolonged use of the brain upon the health of the nervous system, we learn, first, that cases of cerebral exhaustion in people who live wisely are rare. Eat regularly and exercise freely, and there is scarce a limit to the work you may get out of the thinking organs. But if into the life of a man whose powers are fully taxed we bring the elements of great anxiety or worry, or excessive haste, the whole machinery begins at once to work, as it were, with a dangerous amount of friction. Add to this such constant fatigue of body, as some forms of business bring about, and you have all the means needed to ruin the man's power of useful labor.

I have been careful here to state that combined overwork of mind and body is doubly mischievous, because nothing is now more sure in hygienic science than that a proper alternation of physical and mental labor is best fitted to insure a lifetime of wholesome and vigorous intellectual exertion. This is probably due to several causes, but principally to the fact that during active exertion of the body the brain cannot be employed intensely, and therefore has secured to it a state of repose which even sleep is not always competent to supply. There is a Turkish proverb which occurs to me here, like most proverbs more or less true: "Dreaming goes afoot, but who can think on horseback?" Perhaps, too, there is concerned a physiological law, which, though somewhat mysterious, I may again have to summon to my aid in the way of ex-

planation. It is known as the law of Treviranus, its discoverer, and may thus be briefly stated: Each organ is to every other as an excreting organ. In other words, to insure perfect health, every tissue, bone, nerve, tendon, or muscle should take from the blood certain materials and return to it certain others. To do this every organ must or ought to have its period of activity and of rest, so as to keep the vital fluid in a proper state to nourish every other part. This process in perfect health is a system of mutual assurance, and is probably essential to a condition of entire vigor of both mind and body.

It has long been believed that maladies of the nervous system are increasing rapidly in the more crowded portions of the United States; but I am not aware that anyone has studied the death records to make sure of the accuracy of this opinion. There can be no doubt, I think, that the palsy of children becomes more frequent in cities just in proportion to their growth in population. I mention it here because, as it is a disease which does not kill but only cripples, it has no place in the mortuary tables. Neuralgia is another malady which has no record there, but is, I suspect, increasing at a rapid rate wherever our people are crowded together in towns. Perhaps no other form of sickness is so sure an indication of the development of the nervous temperament, or that condition in which there are both feebleness and irritability of the nervous system. But the most unquestionable proof of the in-

crease of nervous disease is to be looked for in the death statistics of cities.

There, if anywhere, we shall find evidence of the fact, because there we find in exaggerated shapes all the evils I have been defining. The best mode of testing the matter is to take the statistics of some large city which has grown from a country town to a vast business hive within a very few years. Chicago fulfills these conditions precisely. In 1852 it numbered 49,407 souls. At the close of 1868 it had reached to 252,054. Within these years it has become the keenest and most wide-awake business center in America. I owe to the kindness of Dr. J. H. Rauch, Sanitary Superintendent of Chicago, manuscript records, hitherto unpublished, of its deaths from nervous disease, as well as the statement of each year's total mortality; so that I have it in my power to show the increase of deaths from nerve disorders relatively to the annual loss of life from all causes. I possess similar details as to Philadelphia, which seem to admit of the same conclusions as those drawn from the figures I have used. But here the evil has increased more slowly. Let us see what story these figures will tell us for the Western city. Unluckily, they are rather dry tale-tellers.

The honest use of the mortuary statistics of a large town is no easy matter, and I must therefore ask that I may be supposed to have taken every possible precaution in order not to exaggerate the reality of a great evil. Certain diseases, such as apoplexy, palsy,

epilepsy, St. Vitus's dance, and lockjaw or tetanus, we all agree to consider as nervous maladies; convulsions, and the vast number of cases known in the death lists as dropsy of the brain, effusion on the brain, etc., are to be looked upon with more doubt. The former, as every doctor knows, are, in a vast proportion of instances, due to direct disease of the nerve centers; or, if not to this, then to such a condition of irritability of these parts as makes them too ready to originate spasms in response to causes which disturb the extremities of the nerves, such as teething and the like. This tendency seems to be fostered by the air and habits of great towns, and by all of the agencies which in these places depress the health of a community. The other class of diseases, as dropsy of the brain or effusion, probably includes a number of maladies, due some of them to scrofula, and to the predisposing causes of that disease; others, to the kind of influences which seem to favor convulsive disorders. Less surely than the former class can these be looked upon as true nervous diseases; so that in speaking of them I am careful to make separate mention of their increase, while thinking it right on the whole to include in the general summary of this growth of nerve disorders this partially doubtful class.

Taking the years 1852 to 1868, inclusive, it will be found that the population of Chicago has increased 5.1 times and the deaths from all causes 3.7 times; while the nerve deaths, including the doubtful class

labeled in the reports as dropsy of the brain and convulsions, have risen to 20.4 times what they were in 1852. Thus in 1852, 1853, and 1855, leaving out the cholera year, 1854, the deaths from nerve disorders were respectively to the whole population as 1 in 1,149, 1 in 953, and 1 in 941; while in 1866, 1867, and 1868, they were 1 in 505, 1 in 415.7, and 1 in 287.8. Still omitting 1854, the average proportion of neural deaths to the total mortality was, in the five years beginning with 1852, 1 in 26.1. In the five latter years studied—that is, from 1864 to 1868, inclusive—the proportion was 1 nerve death to every 9.9 of all deaths.

I have alluded above to a class of deaths included in my tables, but containing, no doubt, instances of mortality due to other causes than disease of the nerve organs. Thus, many which are stated to have been owing to convulsions ought to be placed to the credit of tubercular disease of the brain or to heart maladies; but even in the practice of medicine the distinction as to cause cannot always be made; and as a large proportion of this loss of life is really owing to brain affections, I have thought best to include the whole class in my statement.

A glance at the individual diseases which are indubitably nervous is more instructive and less perplexing. For example, taking the extreme years, the recent increase in apoplexy is remarkable, even when we remember that it is a malady of middle and later life, and that Chicago, a new city, is therefore entitled to a

yearly increasing quantity of this form of death. In 1868 the number was 8.6 times greater than in 1852. Convulsions as a death cause had in 1868 risen to 22 times as many as in the year 1852. Epilepsy, one of the most marked of all nervous maladies, is more free from the difficulties which belong to the last-mentioned class. In 1852 and 1853 there were but 2 deaths from this disease; in the next four years there were none. From 1858 to 1864, inclusive, there were in all 6 epileptic deaths; then we have in the following years, 5, 3, 11; and in 1868 the number had increased to 17. Passing over palsy, which, like apoplexy, increases in 1868—8.6 times as compared with 1852, and 26 times as compared with the four years following 1852—we come to lockjaw, an unmistakable nerve malady. Six years out of the first eleven give us no death from this painful disease; the others, up to 1864, offer, each, 1 only, and the last-mentioned year has but 2. Then the number rises to 3 each year, to 5 in 1867, and to 12 in 1868. At first sight this record of mortality from lockjaw would seem to be conclusive, yet it is perhaps, of all the maladies mentioned, the most deceptive as a means of determining the growth of neural diseases. To make this clear to the general reader he need only be told that tetanus is nearly always caused by mechanical injuries, and that the natural increase of these in a place like Chicago may account for a large part of the increase. Yet, taking the record as a whole, and viewing it only with a calm

desire to get at the truth, it is not possible to avoid seeing that the growth of nerve maladies has been inordinate.

The industry and energy which have built this great city on a morass, and made it a vast center of insatiate commerce, are now at work to undermine the nervous systems of its restless and eager people,[1] with what result I have here tried to point out, chiefly because it is an illustration, in the most concentrated form, of causes which are at work throughout the land.

The facts I have given establish the disproportionate increase in one great city of those diseases which are largely produced by the strain on the nervous system resulting from the toils and competitions of a community growing rapidly and stimulated to its utmost capacity. Probably the same rule would be found to apply to other large towns, but I have not had time to study the statistics of any of them fully; and for reasons already given, Chicago may be taken as a typical illustration.

It were interesting to-day to question the later statistics of this great business-center; to see if the answers would weaken or reënforce the conclusions drawn in 1871. I have seen it anew of late with its population of 700,000 souls. It is a place to-day to excite wonder, and pity, and fear. All the tides of its life move with bustling swiftness. Nowhere else are the streets more

[1] I asked two citizens of this uneasy town—on the same day—what was their business. Both replied tranquilly that they were speculators.

full, and nowhere else are the faces so expressive of preoccupation, of anxiety, of excitement. It is making money fast and accumulating a physiological debt of which that bitter creditor, the future, will one day demand payment.

If I have made myself understood, we are now prepared to apply some of our knowledge to the solution of certain awkward questions which force themselves daily upon the attention of every thoughtful and observant physician, and have thus opened a way to the discussion of the causes, which, as I believe, are deeply affecting the mental and physical health of working Americans. Some of these are due to the climatic conditions under which all work must be done in this country, some are outgrowths of our modes of labor, and some go back to social habitudes and defective methods of early educational training.

In studying this subject, it will not answer to look only at the causes of sickness and weakness which affect the male sex. If the mothers of a people are sickly and weak, the sad inheritance falls upon their offspring, and this is why I must deal first, however briefly, with the health of our girls, because it is here, as the doctor well knows, that the trouble begins. Ask any physician of your acquaintance to sum up thoughtfully the young girls he knows, and to tell you how many in each score are fit to be healthy wives and mothers, or in fact to be wives and mothers at all. I have been asked this question myself very often, and

I have heard it asked of others. The answers I am not going to give, chiefly because I should not be believed —a disagreeable position, in which I shall not deliberately place myself. Perhaps I ought to add that the replies I have heard given by others were appalling.

Next, I ask you to note carefully the expression and figures of the young girls whom you may chance to meet in your walks, or whom you may observe at a concert or in the ballroom. You will see many very charming faces, the like of which the world cannot match—figures somewhat too spare of flesh, and, especially south of Rhode Island, a marvelous littleness of hand and foot. But look further, and especially among New England young girls: you will be struck with a certain hardness of line in form and feature which should not be seen between thirteen and eighteen, at least; and if you have an eye which rejoices in the tints of health, you will too often miss them on the cheeks we are now so daringly criticising. I do not want to do more than is needed of this ungracious talk: suffice it to say that multitudes of our young girls are merely pretty to look at, or not that; that their destiny is the shawl and the sofa, neuralgia, weak backs, and the varied forms of hysteria—that domestic demon which has produced untold discomfort in many a household, and, I am almost ready to say, as much unhappiness as the husband's dram. My phrase may seem outrageously strong, but only the doctor knows what one of these self-made invalids can

do to make a household wretched. Mrs. Gradgrind is, in fiction, the only successful portrait of this type of misery, of the woman who wears out and destroys generations of nursing relatives, and who, as Wendell Holmes has said, is like a vampire, sucking slowly the blood of every healthy, helpful creature within reach of her demands.

If any reader doubts my statement as to the physical failure of our city-bred women to fulfill all the natural functions of mothers, let him contrast the power of the recently imported Irish or Germans to nurse their babies a full term or longer, with that of the native women even of our mechanic classes. It is difficult to get at full statistics as to those of a higher social degree, but I suspect that not over one-half are competent to nurse their children a full year without themselves suffering gravely. I ought to add that our women, unlike ladies abroad, are usually anxious to nurse their own children, and merely cannot. The numerous artificial infant foods now for sale singularly prove the truth of this latter statement. Many physicians, with whom I have talked of this matter, believe that I do not overstate the evil; others think that two-thirds may be found reliable as nurses; while the rural doctors who have replied to my queries state that only from one-tenth to three-tenths of farmers' wives are unequal to this natural demand. There is indeed little doubt that the mass of our women possess that peculiar nervous organization which is associated with great

excitability, and, unfortunately, with less physical vigor than is to be found, for example, in the sturdy English dames at whom Hawthorne sneered so bitterly. And what are the causes to which these peculiarities are to be laid? There are many who will say that late hours, styles of dress, prolonged dancing, etc., are to be blamed; while really, with rare exception, the newer fashions have been more healthy than those they superseded, people are better clad and better warmed than ever, and, save in rare cases, late hours and overexertion in the dance are utterly incapable of alone explaining the mischief. I am far more inclined to believe that climatic peculiarities have formed the groundwork of the evil, and enabled every injurious agency to produce an effect which would not in some other countries be so severe. I am quite persuaded, indeed, that the development of a nervous temperament, with lessened power of endurance, is one of the many race-changes which are also giving us facial, vocal, and other peculiarities derived from none of our ancestral stocks. If, as I believe, this change of temperament in a people coming largely from the phlegmatic races is to be seen most remarkably in the more nervous sex, it will not surprise us that it should be fostered by many causes which are fully within our own control. Given such a tendency, disease will find in it a ready prey, want of exercise will fatally increase it, and all the follies of fashion will aid in the work of ruin.

While a part of the mischief lies with climatic con-

ditions which are utterly mysterious, the obstacles to physical exercise, arising from extremes of temperature, constitute at least one obvious cause of ill health among women in our country. The great heat of summer, and the slush and ice of winter, interfere with women who wish to take exercise, but whose arrangements to go out of doors involve wonderful changes of dress and an amount of preparation appalling to the masculine creature.

The time taken for the more serious instruction of girls extends to the age of nineteen, and rarely over this. During some of these years they are undergoing such organic development as renders them remarkably sensitive. At seventeen I presume that healthy girls are nearly as well able to study, *with proper precautions,* as men; but before this time overuse, or even a very steady use, of the brain is in many dangerous to health and to every probability of future womanly usefulness.

In most of our schools the hours are too many for both girls and boys. From nine until two is, with us, the common school time in private seminaries. The usual recess is twenty minutes or half an hour, and it is not as a rule filled by enforced exercise. In certain schools—would it were common!—ten minutes recess is given after every hour; and in the Blind Asylum of Philadelphia this time is taken up by light gymnastics, which are obligatory. To these hours we must add the time spent in study out of school. This, for some

reason, nearly always exceeds the time stated by teachers to be necessary; and most girls of our common schools and normal schools between the ages of thirteen and seventeen thus expend two or three hours. Does any physician believe that it is good for a growing girl to be so occupied seven or eight hours a day? or that it is right for her to use her brains as long a time as the mechanic employs his muscles? But this is only a part of the evil. The multiplicity of studies, the number of teachers—each eager to get the most he can out of his pupil—the severer drill of our day, and the greater intensity of application demanded, produce effects on the growing brain which, in a vast number of cases, can be only disastrous.

My remarks apply of course chiefly to public-school life. I am glad to say that of late, in all of our best school States, more thought is now being given to this subject; but we have much to do before an evil which is partly a school difficulty and partly a home difficulty shall have been fully provided against.

Careful reading of our Pennsylvania reports and of those of Massachusetts convinces me that while in the country schools overwork is rare, in those of the cities it is more common, and that the system of pushing, of competitive examinations, of ranking, etc., is in a measure responsible for that worry which adds a dangerous element to work.

The following remarks as to the influence of home life in Massachusetts are not out of place here, and will

be reinforced by what is to be said farther on by a competent authority as to Philadelphia:

"The danger of overwork, I believe, exists mainly, if not wholly, in graded schools, where large numbers are taught together, where there is greater competition than in ungraded schools, and where the work of each pupil cannot be so easily adjusted to his capacity and needs. And what are the facts in these schools? I am prepared to agree with a recent London School Board Report so far as to say that in some of our graded schools there are pupils who are overworked. The number in any school is, I believe, small who are stimulated beyond their strength, and the schools are few in which such extreme stimulation is encouraged. When, with a large class of children whose minds are naturally quick and active, the teacher resorts to the daily marking of recitations, to the giving of extra credits for extra work done, to ranking, and to holding up the danger of nonpromotion before the pupils; and when, added to those extra inducements to work, there are given by committees and superintendents examinations for promotion at regular intervals, it would be very strange if there were not some pupils so weak and so susceptible as to be encouraged to work beyond their strength. There is another occasion of overwork which I have found in a few schools, and that is the spending of nearly all of the school time in recitation and putting off study to extra time at home. When, in a school of forty or more, pupils belong to the same

class, and are not separated into divisions for recitation and study, there is a temptation to spend the greater part of the time in recitation which few teachers can resist; and if tasks are given, they have to be learned out of school or not at all. Pupils of grammar schools are known to feel obliged to study two or three hours daily, from this cause, at a time when they should be sleeping, or exercising in the open air. Frequently, however, it is not so much overwork as overworry that most affects the health of the child—that worry which may not always be traced to any fault of system or teacher, but which, it must be admitted, is too often induced by encouraging wrong motives to study.

"In making up the verdict we must not forget that others besides the teacher may be responsible for overwork and overworry. The parents and pupils themselves are quite as often to blame as are the teachers. An unwillingness on the part of pupils to review work imperfectly done, and a desire on the part of parents to have their children get into a higher class, or to graduate, frequently cause pupils to cram for examinations, and to work unduly at a time when the body is least able to bear the extra strain. Again, children are frequently required to take extra lessons in music or some other study at home, thus depriving them of needed exercise and recreation, or exhausting nervous energy which is needed for their regular school work.

"It will be observed that in this charge against parents, I do not speak of those causes of ill health

which really have nothing to do with overwork, but which are oftentimes forgotten when a schoolboy or girl breaks down. I allude to the eating of improper and unwholesome food, to irregularity of eating and sleeping, to attendance upon parties and other places of amusement late at night, to smoking, and to the indulgence of other habits which tend to unduly excite the nervous system. For very obvious reasons these causes of disease are not brought prominently forward by the attending physician, who doubtless thinks it safer and more flattering to his patrons to say that the child has broken down from hard study, rather than from excesses which are somewhat discreditable. While parents are clearly to blame for endangering health in the ways indicated, it may be a question whether the work required to be done in school should not be regulated accordingly; whether, in designating the studies to be taken, and in assigning lessons, there should not be taken into consideration all the circumstances of the pupil's life which can be conveniently ascertained, even though these circumstances are most unfavorable to school work, and are brought about mainly through the ignorance or folly of parents. Of course there is a limit to such an adjustment of work in school, but with proper caution, and a good understanding with the parents there need be little danger of advantage being taken by an indolent child; nor need the school be affected when it is understood to be a sign of weakness rather than of favor to any par-

ticular pupil to lessen his work. Not infrequently there are found other causes of ill health than those which I have mentioned; such, for instance, as poor ventilation, overheating of the schoolroom, draughts of cold air, and the like; not to speak of the annual public exhibition, with the possible nervous excitement attending it. All of these things are mentioned, not because they belong directly to the question of overwork, but because it is well, in considering the question, to keep in mind all possible causes of ill health, that no one cause may be unduly emphasized." [1]

In private schools the same kind of thing goes on, with the addition of foreign languages, and under the dull spur of discipline, without the aid of any such necessities as stimulate the pupils of what we are pleased to call a normal (!) school.

In private schools for girls of what I may call the leisure class of society, overwork is of course much more rare than in our normal schools for girls; but the precocious claims of social life, and the indifference of parents as to hours and systematic living, needlessly add to the ever-present difficulties of the school teacher, whose control ceases when the pupil passes out of her house.

As to the school in which both sexes are educated together a word may be said. Surely no system can be worse than that which complicates a difficult prob-

[1] Forty-ninth Annual Report of the Massachusetts Board of Education, p. 204 (John T. Prince).

lem by taking two sets of beings of different gifts, and of unlike physiological needs and construction, and forcing them into the same educational mold.

It is a wrong for both sexes. Not much unlike the boy in childhood, there comes a time when in the rapid evolution of puberty the girl becomes for a while more than the equal of the lad, and, owing to her conscientiousness, his moral superior, but at this era of her life she is weighted by periodical disabilities which become needlessly hard to consider in a school meant to be both home and school for both sexes. Finally, there comes a time when the matured man certainly surpasses the woman in persistent energy and capacity for unbroken brain work. If then she matches herself against him, it will be, with some exceptions, at bitter cost.

It is sad to think that the demands of civilized life are making this contest almost unavoidable. Even if we admit equality of intellect, the struggle with man is cruelly unequal and is to be avoided whenever it is possible.

The colleges for women, such as Vassar, are nowadays more careful than they were. Indeed, their machinery for guarding health while education of a high class goes on is admirable. What they still lack is a correct public feeling. The standard for health and endurance is too much that which would be normal for young men, and the sentiment of these groups of women is silently opposed to admitting that the femi-

nine life has necessities which do not cumber that of man. Thus the unwritten code remains in a measure hostile to the accepted laws which are supposed to rule.

As concerns our colleges for young men, I have little to say. The cases I see of breakdown among women between sixteen and nineteen who belong to normal schools or female colleges are out of all proportion larger than the number of like failures among young men of the same ages, and yet, as I have hinted, the arrangements for watching the health of these groups of women are usually better than such as the colleges for young men provide. The system of professional guardianship at Johns Hopkins is an admirable exception, and at some other institutions the physical examination on matriculation becomes of the utmost value, when followed up as it is in certain of these schools by compulsory physical training and occasional reëxaminations of the state of health.

I do not see why the whole matter could not in all colleges be systematically made part of the examinations on entry upon studies. It would at least point out to the thoughtful student his weak points, and enable him to do his work and take his exercise with some regard to consequences. I have over and over seen young men with weak hearts or unsuspected valvular troubles, who had suffered from having been allowed to play football. Cases of cerebral trouble in students, due to the use of defective eyes, are common, and I have known many valuable lives among male

and female students crippled hopelessly owing to the fact that no college preëxamination of their state had taught them their true condition, and that no one had pointed out to them the necessity of such correction by glasses as would have enabled them as workers to compete on even terms with their fellows.

In a somewhat discursive fashion I have dwelt upon the mischief which is pressing to-day upon our girls of every class in life. The doctor knows how often and how earnestly he is called upon to remonstrate against this growing evil. He is, of course, well enough aware that many sturdy girls stand the strain, but he knows also that very many do not—and that the brain, sick with multiplied studies and unwholesome home life, plods on, doing poor work, until somebody wonders what is the matter with that girl; or she is left to scramble through, or break down with weak eyes, headaches, neuralgias, or what not. I am perfectly confident that I shall be told here that girls ought to be able to study hard between fourteen and eighteen years without injury, if boys can do it. Practically, however, the boys of to-day are getting their toughest education later and later in life, while girls leave school at the same age as they did thirty years ago. It used to be common for boys to enter college at fourteen; at present, eighteen is a usual age of admission at Harvard or Yale. Now, let anyone compare the scale of studies for both sexes employed half a century ago with that of to-day. He will find that its

demands are vastly more exacting than they were—a difference fraught with no evil for men, who attack the graver studies later in life, but most perilous for girls, who are still expected to leave school at eighteen on earlier.[1]

I firmly believe—and I am not alone in this opinion—that as concerns the physical future of women they would do far better if the brain were very lightly tasked and the school hours but three or four a day until they reach the age of seventeen at least. Anything, indeed, were better than loss of health; and if it be in any case a question of doubt, the school should be unhesitatingly abandoned or its hours lessened, as at least in part the source of very many of the nervous maladies with which our women are troubled. I am almost ashamed to defend a position which is held by many competent physicians, but an intelligent friend, who has read this page, still asks me why it is that overwork of brain should be so serious an evil to women at the age of womanly development. My best reply would be the experience and opinions of those of us who are called upon to see how many schoolgirls are suffering in health from confinement, want of exercise at the time of day when they most incline to it, bad ventilation,[2] and too steady occupation of mind. At

[1] Witness Richardson's heroine, who was "perfect mistress of the four rules of arithmetic!"

[2] In the city where this is written there is, so far as I know, not one private girls' school in a building planned for a schoolhouse. As a con-

no other time of life is the nervous system so sensitive—so irritable, I might say—and at no other are abundant fresh air and exercise so all-important. To show more precisely how the growing girl is injured by the causes just mentioned would lead me to subjects unfit for full discussion in these pages, but no thoughtful reader can be much at a loss as to my meaning.

The following remarks I owe to the experience of a friend,[1] a woman, who kindly permits me to use them in full. They complete what I have space to add as to the matter of education, and deserve to be read with care by every parent, and by everyone concerned in our public schools.

"There can be no question that the health of growing girls is overtaxed; but in my opinion, this is a vice of the age, and not primarily of the schools. I have found teachers more alive to it than parents or the general public. Upon interrogating a class of forty girls, of ages varying from twelve to fourteen, I found that more than half the number were conscious of loss of sleep and nervous apprehension before examinations; but I discovered, upon further inquiry, that nearly one-half of this class received instruction in one or two branches outside of the school curriculum, with the intention of qualifying to become teachers. I could

sequence, we hear endless complaints from young ladies of overheated or chilly rooms. If the teacher be old, the room is kept too warm; or if she be young, and much afoot about her school, the apartment is apt to be cold.

[1] Miss Pendleton.

get no information as to appetite or diet; all of the class, as the teacher informed me, being ashamed to give information on questions of the table. In the opinion of this teacher, nervousness and sleeplessness are somewhat due to studies and indoor social amusements in addition to regular school work, but chiefly to ignorance in the home as to the simplest rules of healthy living. Nearly all the girls in this class drink a cup of tea before leaving home, eat a sweet biscuit as they walk, hurried and late, to school, and nothing else until they go home to their dinners at two o'clock. All their brain work in the schoolroom is done before eating any nourishing food. The teacher realized the injurious effects of the present forcing system, and suggested withdrawing the girls from school for one year between the grammar and high-school grades. When I asked whether a better result would not be obtained by keeping the girls in school during this additional year, but relieving the pressure of purely mental work by the introduction throughout all the grades of branches in household economy, she said this seemed to her ideal but, she feared, impracticable, not from the nature of schools, but from the nature of boards.

"A Latin graduating class of seven girls, aged seventeen and eighteen years, stated that they do their work without nervousness, restlessness, or apprehension.

"This, with other statistics, would seem to bear

out your theory that after seventeen girls may study with much less risk to health.

"So far as I have observed, the strain or tear is chiefly in the case of girls studying to become teachers. These girls often press forward too rapidly for the purpose of becoming self-supporting at the age of eighteen. The bait of a salary, and a good salary for one entering upon a profession, lures them on; and a false sympathy in members of boards and committees lends itself to this injurious cramming.

"Our own normal school,[1] which is doing a great, an indispensable, work in preparing a trained body of faithful, intelligent teachers, has succumbed to this injurious tendency. We have here the high and normal grades merged into one, the period of adolescence, stricken out of the girl's school life, and many hundreds of girls hurried annually forward beyond their physical or mental capacity, in advance of their physical growth for the sake of those who cannot afford to remain in school one or two years longer. I say this notwithstanding the fact that this school is, in my opinion, one of the most potent agencies for good in the community.

"Overpressure in school appears to me to be a disease of the body politic from which this member suffers; but it also seems to me that this vast school system is the most powerful agency for the correction of the evil. In the case of girls, the first principle to be

[1] Philadelphia.

recognized is that the education of women is a problem by itself; that in all its lower grades, at all events, it is not to be laid down exactly upon the lines of education for boys.

" The school system may be made a forceful agency for building up the family, and the integrity of the home is without doubt the vital question of the age.

" Edward Everett Hale, with his far spiritual sight, has discerned the necessity for restoring home training, and advocates, to this end, short school terms of a few weeks annually. It is probable that in the future many school departments will be relegated to the home, but the homes are not now prepared to assume these duties.

" When it was discovered that citizens must be prepared for their political duties the schools were opened; but the means so far became an end that even women were educated only in the directions which bear upon public and not upon household economy. The words of Stein, that ' what we put into the schools will come out in the manhood of the nation afterwards,' cannot be too often quoted. Let branches in household economy be connected with all the general as distinguished from normal-school grades, and we not only relieve the girl immediately of the strain of working with insufficient food, and of acquiring skill in household duties in addition to the school curriculum, we not only simplify and harmonize her work, but we send out in every case a woman prepared to carry this new influ-

ence into all her future life, even if a large number of these women should eventually pursue special or higher technical branches; for we are women before we are teachers, lawyers, physicians, etc., and if we are to add anything of distinctive value to the world by entering upon the fields of work hitherto preëmpted by men, it will be by the essential quality of this new feminine element.

"The strain in all work comes chiefly from lack of qualification by training or nature for the work in hand—tear in place of wear. The schools can restore the ideal of quiet work. They have an immense advantage in regularity, discipline, time. This vast system gives an opportunity, such as no private schools offer, for ascertaining the average work which is healthful for growing girls. It is quite possible to ascertain, whether by women medical officers appointed to this end, or by the teachers themselves, the physical capacity of each girl, and to place her where this will not be exceeded. Girls trained in school under such wise supervision would go out into life qualified to guard the children of the future. The chief cause of overwork of children at present is the ignorance of parents as to the injurious effects of overwork, and of the signs of its influence.

"The first step toward the relief of overpressure and false stimulus is to discard the pernicious idea that it is the function of the normal school to offer to every girl in the community the opportunity for becoming

a teacher. This unwholesome feature is the one distinctive strain which must be removed from the system. It can be done provided public and political sentiment approve. The normal school should be only a device for securing the best possible body of teachers. It should be technical.

"Every teacher knows that the average girl of seventeen has not reached the physical, mental, or moral development necessary to enter upon this severe and high professional course of studies, and that one year is insufficient for such a course.

"Lengthen the time given to normal instruction—make it two years; give in this school instruction purely in the science of education; relegate all general instruction to a good high school covering a term of four years. In this, as in all other progressive formative periods, the way out is ahead.

"It will be time enough to talk of doing away with a portion of the girls' school year when the schools have fulfilled their high mission, when they have sent out a large body of American women prepared, not for a single profession, even the high feminine vocation of pedagogy, but equipped for her highest, most general and congenial functions as the source and center of the home."

I am unwilling to leave this subject without a few words as to our remedy, especially as concerns our public schools and normal schools for girls. What seems to me to be needed most is what the woman

would bring into our school boards. Surely it is also possible for female teachers to talk frankly to that class of girls who learn little of the demands of health from uneducated or busy or careless mothers, and it would be as easy—if school boards were what they should be—to insist on such instruction, and to make sure that the claims of maturing womanhood are considered and attended to. Should I be told that this is impracticable, I reply that as high an authority as Samuel Eliot, of Massachusetts, has shown in large schools that it is both possible and valuable As concerns the home life, it is also easy to get at the parents by annual circulars enforcing good counsel as to some of the simplest hygienic needs in the way of sleep, hours of study, light, and meals.

It were better not to educate girls at all between the ages of fourteen and eighteen, unless it can be done with careful reference to their bodily health. To-day, the American woman is, to speak plainly, too often physically unfit for her duties as woman, and is perhaps of all civilized females the least qualified to undertake those weightier tasks which tax so heavily the nervous system of man. She is not fairly up to what nature asks from her as wife and mother. How will she sustain herself under the pressure of those yet more exacting duties which nowadays she is eager to share with the man?

While making these stringent criticisms, I am anxious not to be misunderstood. The point which

above all others I wish to make is this, that owing chiefly to peculiarities of climate, our growing girls are endowed with organizations so highly sensitive and impressionable that we expose them to needless dangers when we attempt to overtax them mentally. In any country the effects of such a course must be evil, but in America I believe it to be most disastrous.

As I have spoken of climate in the broad sense as accountable for some peculiarities of the health of our women, so also would I admit it as one of the chief reasons why work among men results so frequently in tear as well as wear. I believe that something in our country makes intellectual work of all kinds harder to do than it is in Europe; and since we do it with a terrible energy, the result shows in wear very soon, and almost always in the way of tear also. Perhaps few persons who look for evidence of this fact at our national career alone will be willing to admit my proposition, but among the higher intellectual workers, such as astronomers, physicists, and naturalists, I have frequently heard this belief expressed, and by none so positively as those who have lived on both continents. Since this paper was first written I have been at some pains to learn directly from Europeans who have come to reside in America how this question has been answered by their experience. For obvious reasons, I do not name my witnesses, who are numerous; but, although they vary somewhat in the proportion of the effects which they ascribe to climate and to such

domestic peculiarities as the overheating of our houses, they are at one as regards the simple fact that, for some reason, mental work is more exhausting here than in Europe; while, as a rule, such Americans as have worked abroad are well aware that in France and in England intellectual labor is less trying than it is with us. A great physiologist, well known among us, long ago expressed to me the same opinion; and one of the greatest of living naturalists, who is honored alike on both continents, is positive that brain work is harder and more hurtful here than abroad—an opinion which is shared by Oliver Wendell Holmes and other competent observers. Certain it is that our thinkers of the classes named are apt to break down with what the doctor knows as cerebral exhaustion—a condition in which the mental organs become more or less completely incapacitated for labor—and that this state of things is very much less common among the *savants* of Europe. A share in the production of this evil may perhaps be due to certain general habits of life which fall with equal weight of mischief upon many classes of busy men, as I shall presently point out. Still, these will not altogether account for the fact, nor is it to my mind explained by any of the more obvious faults in our climate, nor yet by our habits of life, such as furnace-warmed houses, hasty meals, bad cooking, or neglect of exercise. Let a man live as he may, I believe he will still discover that mental labor is with us more exhausting than we could wish it to

be. Why this is I cannot say, but it is not more mysterious than the fact that agents which, as sedatives or excitants, affect the great nerve centers, do this very differently in different climates. There is some evidence to show that this is also the case with narcotics; and perhaps a partial explanation may be found in the manner in which the excretions are controlled by external temperatures, as well as by the fact which Dr. Brown-Séquard discovered, and which I have frequently corroborated, that many poisons are retarded in their action by placing the animal affected in a warm atmosphere.

It is possible to drink with safety in England quantities of wine which here would be disagreeable in their first effect and perilous in their ultimate results. The Cuban who takes coffee enormously at home, and smokes endlessly, can do here neither the one nor the other to the same degree. And so also the amount of excitation from work which the brain will bear varies exceedingly with variations of climatic influences.

We are all of us familiar with the fact that physical work is more or less exhausting in different climates, and as I am dealing, or about to deal, with the work of business men, which involves a certain share of corporeal exertion, as well as with that of mere scholars, I must ask leave to digress, in order to show that in this part of the country at least the work of the body probably occasions more strain than

in Europe, and is followed by greater sense of fatigue.

The question is certainly a large one, and should include a consideration of matters connected with food and stimulants, on which I can but touch. I have carefully questioned a number of master mechanics who employ both foreigners and native Americans, and I am assured that the British workman finds labor more trying here than at home; while, perhaps, the eight-hour movement may be looked upon as an instinctive expression of the main fact as regards our working class in general.

A distinguished English scholar informs me that since he has resided among us the same complaints, as to the depressing effects of physical labor in America, have come to him from skilled English mechanics. What share change of diet and the like may have in the matter, I have not space to discuss.[1]

Although, from what I have seen, I should judge that overtasked men of science are especially liable to the trouble which I have called cerebral exhaustion, all classes of men who use the brain severely, and who have also—and this is important—seasons of excessive

[1] The new emigrant suffers in a high degree from the same evils as to cookery which affect only less severely the mass of our people, and this, no doubt, helps to enfeeble him. The frying pan has, I fear, a better right to be called our national emblem than the eagle, and I grieve to say it reigns supreme west of the Alleghanies. I well remember that a party of friends about to camp out were unable to buy a gridiron in two Western towns, each numbering over four thousand eaters of fried meats.

anxiety or of grave responsibility, are subject to the same form of disease; and this is, I presume, why we meet with numerous instances of nervous exhaustion among merchants and manufacturers. The lawyer and clergyman offer examples, but I do not remember ever to have seen a bad case among physicians. Dismissing the easy jest which the latter statement will surely suggest, the reason for this we may presently encounter.

My notebooks seem to show that manufacturers and certain classes of railway officials are the most liable to suffer from neural exhaustion. Next to these come merchants in general, brokers, etc.; then, less frequently, clergymen; still less often, lawyers; and, more rarely, doctors; while distressing cases are apt to occur among the overschooled young of both sexes.

The worst instances to be met with are among young men suddenly cast into business positions involving weighty responsibility. I can recall several cases of men under or just over twenty-one who have lost health while attempting to carry the responsibilities of great manufactories. Excited and stimulated by the pride of such a charge, they have worked with a certain exaltation of brain, and, achieving success, have been stricken down in the moment of triumph. This too frequent practice of immature men going into business, especially with borrowed capital, is a serious evil. The same person, gradually trained to naturally and slowly increasing burdens, would have been sure of healthy success. In individual cases I have found

it so often vain to remonstrate or to point out the various habits which collectively act for mischief on our business class that I may well despair of doing good by a mere general statement. As I have noted them, connected with cases of overwork, they are these: Late hours of work, irregular meals bolted in haste away from home, the want of holidays and of pursuits outside of business, and the consequent practice of carrying home, as the only subject of talk, the cares and successes of the countinghouse and the stock board. Most of these evil habits require no comment. What indeed can be said? The man who has worked hard all day, and lunched or dined hastily, comes home or goes to the club to converse—save the mark!—about goods and stocks. Holidays, except in summer, he knows not, and it is then thought time enough taken from work if the man sleeps in the country and comes into a hot city daily, or at the best has a week or two at the seashore. This incessant monotony tells in the end. Men have confessed to me that for twenty years they had worked every day, often traveling at night or on Sundays to save time; and that in all this period they had not taken one day for play. These are extreme instances, but they are also in a measure representative of a frightfully general social evil.

Is it any wonder if asylums for the insane gape for such men? There comes to them at last a season of business embarrassment; or, when they get to be fifty or thereabouts, the brain begins to feel the strain,

and just as they are thinking, "Now we will stop and enjoy ourselves," the brain, which, slavelike, never murmurs until it breaks out into open insurrection, suddenly refuses to work, and the mischief is done. There are therefore two periods of existence especially prone to those troubles—one when the mind is maturing; another at the turning point of life, when the brain has attained its fullest power, and has left behind it, accomplished, the larger part of its best enterprise and most active labor.

I am disposed to think that the variety of work done by lawyers, their long summer holiday, their more general cultivation, their usual tastes for literary or other objects out of their business walks, may, to some extent, save them, as well as the fact that they can rarely be subject to the sudden and fearful responsibilities of business men. Moreover, like the doctor, the lawyer gets his weight upon him slowly, and is thirty at least before it can be heavy enough to task him severely. The business man's only limitation is need of money, and few young mercantile men will hesitate to enter trade on their own account if they can command capital. With the doctor, as with the lawyer, a long intellectual education, a slowly increasing strain, and responsibilities of gradual growth tend, with his outdoor life, to save him from the form of disease I have been alluding to. This element of open-air life, I suspect, has a large share in protecting men who in many respects lead a most unhealthy existence.

The doctor, who is supposed to get a large share of exercise, in reality gets very little after he grows too busy to walk, and has then only the incidental exposure to out-of-door air. When this is associated with a fair share of physical exertion, it is an immense safeguard against the ills of anxiety and too much brain work. I presume that very few of our generals could have gone through with their terrible task if it had not been that they lived in the open air and exercised freely. For these reasons I do not doubt that the effects of our great Civil War were far more severely felt by the Secretary of War and President Lincoln, than by Grant or Sherman.

The wearing, incessant cares of overwork, of business anxiety, and the like, produce directly diseases of the nervous system, and are also the fertile parents of dyspepsia, consumption, and maladies of the heart. How often we can trace all the forms of the first-named protean disease to such causes is only too well known to every physician, and their connection with cardiac troubles is also well understood. Happily, functional troubles of heart or stomach are far from unfrequent precursors of the graver mischief which finally falls upon the nerve centers, if the lighter warnings have been neglected; and for this reason no man who has to use his brain energetically and for long periods can afford to disregard the hints which he gets from attacks of palpitation of heart or from a disordered stomach. In many instances these are the

only expressions of the fact that he is abusing the machinery of mind or body; and the sufferer may think himself fortunate that this is the case, since even the least serious degrees of direct exhaustion of the centers with which he feels and thinks are more grave and are less open to ready relief.

When affections of the outlying organs are neglected, and even in many cases where these have not suffered at all, we are apt to witness, as a result of too prolonged anxiety combined with business cares, or even of mere overwork alone, with want of proper physical habits as to exercise, amusement, and diet, that form of disorder of which I have already spoken as cerebral exhaustion; and before closing this paper I am tempted to describe briefly the symptoms which warn of its approach or tell of its complete possession of the unhappy victim. Why it should be so difficult of relief is hard to comprehend, until we remember that the brain is apt to go on doing its weary work automatically and despite the will of the unlucky owner; so that it gets no thorough rest, and is in the hapless position of a broken limb which is expected to knit while still in use. Where physical overwork has worn out the spinal or motor centers, it is, on the other hand, easy to enforce repose, and so to place them in the best condition for repair. This was often and happily illustrated during the war. Severe marches, bad food, and other causes which make war exhausting were constantly in action, until certain

men were doing their work with too small a margin of reserve power. Then came such a crisis as the last days of McClellan's retreat to the James River, or the forced march of the Sixth Army Corps to Gettysburg, and at once these men succumbed with palsy of the legs. A few months of absolute rest, good diet, ale, fresh beef, and vegetables restored them to perfect health.

In all probability incessant use of a part flushes with blood the nerve centers which furnish it with motor energy, so that excessive work may bring about a state of congestion, owing to which the nerve center becomes badly nourished, and at last strikes work. In civil life we sometimes meet with such cases among certain classes of artisans: paralysis of the legs as a result of using the treadle of the sewing machine ten hours a day is a good example, and, I am sorry to add, not a very rare one, among the overtasked women who slave at such labor.

Now let us see what happens when the intellectual organs are put overlong on the stretch, and when moral causes, such as heavy responsibilities and overanxiety, are at work.

When in active use, the thinking organs become full of blood, and, as has been shown, rise in temperature, while the feet and hands become cold. Nature meant that, for their work, they should be, in the first place, supplied with food; next, that they should have certain intervals of rest to rid themselves

of the excess of blood accumulated during their periods of activity, and this is to be done by sleep, and also by bringing into play the physical machinery of the body, such as the muscles—that is to say, by exercise which flushes the parts engaged in it and so depletes the brain. She meant, also, that the various brain organs should aid in the relief by being used in other directions than mere thought; and lastly, she desired that, during digestion, all the surplus blood of the body should go to the stomach, intestines, and liver, and that neither blood nor nerve power should be then misdirected upon the brain; in other words, she did not mean that we should try to carry on, with equal energy, two kinds of important functional business at once.

If, then, the brain user wishes to be healthy he must limit his hours of work according to rules which will come of experience, and which no man can lay down for him. Above all, let him eat regularly and not at too long intervals. I well remember the amazement of a distinguished naturalist when told that his sleeplessness and irregular pulse were due to his fasting from nine until six. A biscuit and a glass of porter, at one o'clock, effected a ready and pleasant cure. As to exercise in the fresh air, I need say little, except that if the exercise can be made to have a distinct object, not in the way of business, so much the better. Nor should I need to add that we may relieve the thinking and worrying mechanisms by light reading and other

amusements, or enforce the lesson that no hard work should be attempted during digestion. The wise doctor may haply smile at the commonplace of such directions, but woe be to the man who neglects them!

When an overworked and worried victim has sufficiently sinned against these simple laws, if he does not luckily suffer from disturbances of heart or stomach, he begins to have certain signs of nervous exhaustion.

As a rule, one of two symptoms appears first, though sometimes both come together. Work gets to be a little less facile; this astonishes the subject, especially if he has been under high pressure and doing his tasks with that ease which comes of excitement. With this, or a little later, he discovers that he sleeps badly, and that the thoughts of the day infest his dreams, or so possess him as to make slumber difficult. Unrefreshed, he rises and plunges anew into the labor for which he is no longer competent. Let him stop here; he has had his warning. Day after day the work grows more trying, but the varied stimulants to exertion come into play, the mind, aroused, forgets in the cares of the day the weariness of the night season; and so, with lessening power and growing burden, he pursues his purpose. At last come certain new symptoms, such as giddiness, dimness of sight, neuralgia of the face or scalp, with entire nights of insomnia and growing difficulty in the use of the mental powers; so that to attempt a calculation, or any form of in-

tellectual labor, is to insure a sense of distress in the head, or such absolute pain as proves how deeply the organs concerned have suffered. Even to read is sometimes almost impossible; and there still remains the perilous fact that under enough of moral stimulus the man may be able, for a few hours, to plunge into business cares, without such pain as completely to incapacitate him for immediate activity. Night, however, never fails to bring the punishment; and at last the slightest prolonged exertion of mind becomes impossible. In the worst cases the scalp itself grows sore, and a sudden jar hurts the brain, or seems to do so, while the mere act of stepping from a curbstone produces positive pain.

Strange as it may seem, much of all of this may happen to a man, and he may still struggle onward, ignorant of the terrible demands he is making upon an exhausted brain. Usually, by this time he has sought advice, and, if his doctor be worthy of the title, has learned that while there are certain aids for his symptoms in the shape of drugs, there is only one real remedy. Happy he if not too late in discovering that complete and prolonged cessation from work is the one thing needful. Not a week of holiday, or a month, but probably a year or more of utter idleness may be absolutely essential. Only this will answer in cases so extreme as that I have tried to depict, and even this will not always insure a return to a state of active working health.

I am very far from conceding that the vehement energy with which we do our work is due altogether to greed. We probably idle less and play less than any other race, and the absence of national habits of sport, especially in the West, leaves the man of business with no inducement to abandon that unceasing labor in which at last he finds his sole pleasure. He does not ride, or shoot, or fish, or play any game but euchre. Business absorbs him utterly, and at last he finds neither time nor desire for books. The newspaper is his sole literature; he has never had time to acquire a taste for any reading save his ledger. Honest friendship for books comes with youth or, as a rule, not at all. At last his hour of peril arrives. Then you may separate him from business, but you will find that to divorce his thoughts from it is impossible. The fiend of work he raised no man can lay. As to foreign travel, it wearies him. He has not the culture which makes it available or pleasant. Notwithstanding the plasticity of the American, he is now without resources. What then to advise, I have asked myself countless times. Let him at least look to it that his boys go not the same evil road. The best business men are apt to think that their own successful careers represent the lives their children ought to follow, and that the four years of college spoil a lad for business. In reality these years, be they idle or well filled with work, give young men the custom of play, and surround them with an atmosphere of culture which leaves them with boun-

tiful resources for hours of leisure, while they insure to them in these years of growth wholesome, unworried freedom from such business pressure as the successful parent is so apt to put on too youthful shoulders.

Somewhat distracted by the desire to be brief, and yet to tell the whole story, I have sought, in what I fear is a very loose and disconnected way, to put in a new light some of the evils which are hurting the mothers of our race, and those which every day's experience teaches the doctor are gravely affecting the working capacity of numberless men. I trust I have succeeded in satisfying my readers that we dwell in a climate where work of all kinds demands greater precautions as to health than is the case abroad. We cannot improve our climate, but it is quite possible that we have not sufficiently learned to modify the conditions of labor in accordance with those of the sky under which we live.

No student of the nervous maladies of American men and women will think I have overdrawn any part of the foregoing sketch. It would have been as easy, had such a course been proper, to tell the individual stories of youth—vigorous, eager, making haste to be rich—wrecked and made unproductive and dependent for years or forever; and of middle age, unable or unwilling to pause in the career of dollar getting, crushed to earth in the hour of fruition, or made powerless to labor longer at any cost for those who were dearest.

CHAPTER II

Nurse and Patient

I ONCE heard a doctor, well known in his day and skilled in the arts of curing, say that he feared the great mass of physicians, in their every-day familiarity with disease, did not fully feel how great a calamity in a healthy household is a case of grave illness. I have many times since then had occasion to appreciate the correctness and force of this remark, and am sure that I can do no better service than by preaching a little sermon on his brief text, and pointing out more at large what he meant, and how it is that the sickness of one in a house may become the fruitful source of mischief to others.

I suppose that my friend, when he thus spoke, did not refer at all to the many little ailments of childhood, which to the young mother seem serious enough. The little aches, the so-called colds and the indigestions born of changes of diet, of teething, and what not, come and go, needing for the most part but slight medication, and far more often wise advice as to food, dress, temperature, and ventilation, with probably very little besides; the doctor's best function nowadays being in

the mass of such cases to stand between the mother or nurse, naturally eager to do something, and the sick child, and to save the little one from that system of incessant dosing which at present is practiced chiefly by the homeopath—in a word, to put in a constant plea for sanitary wisdom in the nursery, and for that best of the herbs of the field called *time*.

But there is in every community, both among children and adults, a vast list of cases of disease which are in their nature long and wearisome: fevers which endure for weeks; lung and heart maladies which through months or years lead slowly to death; cases of mental trouble; and the sad catalogue of palsies and other maladies of the nervous system, many of them of great and uncertain duration. Let any one of these fall upon one of a household, and it is very apt to bring in its train certain incidental calamities which, as it seems to me, are to some extent avoidable or unnecessary. I should like briefly, but as forcibly as I can, to point out what these evils are, on whom they alight, and how best to avoid them. What I shall have to say will seem, I doubt not, very commonplace to my fellow practitioners, who are every day uttering like warnings in special cases; but if there be any value in sermons, it is because they are preached to those not under the immediate influence of temptation, for which reason, perhaps, these words may be of more service than such as are spoken to people already pledged to some fixed course of hurtful action.

Let us suppose that some one in a family group fails and sickens, until at last the doctor comes and makes his study of the case. Then follow perhaps a few days of anxious waiting, and we learn at length that the patient is ill of a low fever, most apt, in our latitudes, to be typhoid. These few days of doubt are very trying, not alone to those who await the medical verdict, but also to the doctor himself, who can very rarely know from the outset of the case precisely what form of evil he has to contend with. Many diseases begin with the same symptoms, just as many words begin with the same letters: each added letter helps us to identify the word, and each additional sign helps to indicate the malady, until doubt ripens to certainty, and we know at length what foe we have to deal with. Then the shadows begin to thicken with all the dreary accompaniments of illness, until by and by the first confusion disappears, and the steady order and discipline of the little hospital service of the sick room takes shape beneath the doctor's watchful eye. One of the earliest questions he has to settle is as to who shall nurse this patient—who in his absence is to be the hands, and at times the head, for in every fever case there should be one nurse, with such obedient assistants as she may need for relief and rest. In most cases, for various reasons, the nursing has to be done by members of the family. It seems to them horrible that a stranger or hireling should come in to take what they conceive to be their duties, or haply it is a mere

question of means. Only too often some one female member of the household seizes on the work and devotes herself to it, excluding all outside help, and only too often going through it with a splendidly absurd and reckless disregard of common sense. Or else, starting with the case, she gets upon her by degrees that strange feminine mood of sacrifice, and, conscious of her physical inability, but urged by this insanity of loving, will go through with it, say what you will, protest as you may.

Now, it seems a slight thing at first thought to take care for a few weeks of a sick person, but, apart from the night watchings which are so wearisome, the life has trials which sorely task the strongest, and the effects of which are strangely sharpened owing to the nurse being tied by love bonds to the sick. Here are some weeks to be spent chiefly in a dim light, such as most patients like to have. There is the incessant watchfulness; the new and trying task of carefully noting the hours and seeing to the ordered sequence of medicines, stimulants, and food; the broken, irregular rest, and the undue and needless exactions which the patient will make upon a relative. With these comes also the entire change in habits of life, and a worrying sense of novel responsibility, which is intensified by the influence of affection; so that every little decision which the nurse has to make becomes a trial of needless severity. I suspect that the average woman of the upper class would plunge into such a life with the utmost

confidence in her capacity to nurse, little imagining that, unless she is a most exceptional person, her very affection would be against her making a good nurse.

There is, moreover, one physical disability which few people think of when assuming the care of a sick person. It is necessary again and again, in every grave case of illness, for the nurse to put forth all her strength at times in lifting or moving the sufferer. To do this well or with comfort to a patient is no easy thing for a strong man, because it requires him to bend over the bed in a posture which makes the effort to lift most trying. The consequences of such exertion to a woman, especially to one untrained in nursing and unused to its exactions, are such as may easily be imagined without further words from me.

What you want in a sick room is a calm, steady discipline, existing but unfelt—the patient, cool control which a stranger is far more apt to exercise than a relative. In a word, just as a doctor always feels it unwise to attend alone his own dear ones in grave illness, for like but lesser reasons the best nurse is a stranger—one who is naturally free from worry and irritations, who is unmoved by traditions of love, and who, acting simply and purely from sense of duty, takes that care of her own health which is essential to make her nursing perfect. Such an attendant is willing to take her share of sleep and fresh air, and so remain cool and tranquil under all circumstances and in all exigencies, making far more light the task of the

doctor, and able from experience of illness to note changes and call for aid at needed times. Such help excludes from a sick room that host of little annoyances for doctor and patient which I may call *fuss*. I have been astonished that in Miss Nightingale's book so little is said on this subject of amateur nursing and its evils; but certainly most doctors will agree with me that, save in the cases of infants, where the mother cannot and should not be displaced, the best nursing is paid nursing, and the worst very often that which comes from the family. But if the sentiment of a too tender self-devotion, when undertaking this task, be bad for the patient, it is still worse for the loving nurse; so I feel that, despite what I have said just now, I may have failed to say forcibly enough how vast is the strain of such a task. Let any of my readers recall anew the intensity of interest, the anxious eagerness with which they may have watched a very sick friend, wife, sister, or husband. Let them bring back the nervous terrors which grew upon them through the long hours of dreary waiting for the turn in the tide, and recall the enormous physical effort exacted, and they will perhaps come to understand me better. Such a situation brings to the nurse just that combination of anxiety with overwork which I have elsewhere described as apt in business men to bring about diseased states of brain; nor does it fail of like effect in the nursing woman thus overtaxed. The patient dies or recovers, but leaves in many cases a sad legacy of

broken health to the friend who watched and wept by the bedside. I have been amazed sometimes to see how brief a period of such work will entail, even in seemingly healthy people, weeks or months of intense prostration, or some long and mischievous train of puzzling nervous symptoms. Indeed, some of the most alarming and permanent breakdowns in (apparently) strong and vigorous women I have seen follow prolonged efforts at nursing their friends, while it is at least far more rare to see like results among paid nurses.

The analogy to which I have referred between the strain which sometimes falls on business men in time of panic or financial distress, and that which injures the unaccustomed and untrained nurse, is curiously complete. In both there is the combination of anxiety with overwork both physical and mental, and in both alike the hurtfulness of the trial is masked by the excitement which furnishes for a while the means for waging unequal battle, and prevents the sufferer from knowing or feeling the extent of the too constant effort he is making. This is one of the evils of all work done under moral stimulus, and when the excitation comes from the emotions the expenditure of nerve force becomes doubly dangerous, because in this case not only is the governing power taken away from the group of faculties which make up what we call common sense, but also because in women overtaxing the emotional centers is apt to result in the development of

that curious functional disorder which is known to the doctor as hysteria, and which is perhaps, when severe, one of the worst calamities that can fall upon a woman.

It happens, for obvious reasons, that fever cases must sometimes be nursed by members of the family; and when this is once decided upon, there are certain distinct and simple precautions against future trouble which it may be well to notice. One person, if possible a woman of middle age, should have the entire control of the sick room, and should receive the physician's orders, and direct such cares as must fall, or ought to fall, in part upon others. This arrangement, when clearly understood, at once ends a good deal of the fuss and disorder which come of too many heads, and puts the doctor far more at his ease. There is one person to look to, one responsible caretaker to whom he can turn, and who should always make out the written schedule of diet and medicines, and should be able to answer all his questions. It were best that such a person had her regular sleep, and that she confided to others the night watches, with such directing care as might be needed. Without a full share of sleep I do not think that anyone can preserve fully that measure of equanimity or freedom from irritability, that normal tone of mind and body, which in such a long-continued strain is absolutely needed. Quite as important is it that the nurse, and indeed everyone about a sick room, should be a part of the day out of doors.

Nothing freshens a nurse like this, and without it she is unable to eat as she should do, and thus to supply to sorely taxed organs the nourishment they need; for if anyone requires generous living, it is the watcher by a sick bed. We are met at this point by difficulties which inertness, sentiment, or selfish thoughtlessness make at times almost insurmountable. The indisposition of our women to exercise is favored in such cases by unwillingness to seem even for a moment to desert a loved one, and by a morbid feeling that one ought not to be seen out of doors when those most dearly loved are in peril; while in some few cases the patient's wishes are the greatest obstacle. It is easy, however, to overcome these little difficulties by choosing early morning or late evening hours for exercise, and by always telling the patient you are going, and punctually returning at the time you have set, so as to avoid for him those petty disappointments which want of such care brings to the morbidly irritable invalid. As regards paid nurses, the hindrance to needed fresh air comes from want of thought in their employers. It has happened again and again to every careful doctor to ask of the nurse, "When were you out of doors?" and to learn from her reply that days or weeks may have slipped past without anyone's having had the humanity to take care that she should have a chance to breathe the fresh air of the streets. I have been many times amazed at the want of thought as to this matter on the part of even the kindliest women and

the most thoughtful physicians. If you want a good nurse, you must have a healthy nurse, and no human being can be caged in a sick room for weeks and still remain well; and if not well, your nurse is just a little irritable, somewhat less alert than common, or perhaps wearied into the carelessness that comes of such usage.

Thus far I have limited my remarks to the subject of cases of acute illness, which, however trying, are more or less brief when compared to the maladies yet to be considered in their influence on attendants. There is in every community a certain proportion of sick persons who are chronic invalids, and who, from various causes, being closely confined to their rooms or beds, exact a vast amount of careful nursing. Such cases bring in their train to many households an amount of misery of which, at first thought, it is hard to conceive. Among these we find the sad catalogue of consumptives, paralytics, and the lesser nervous maladies, as the graver forms of hysteria and mental affections. Of course, in many wealthy houses the heaviest care of such cases is confided to good hired nurses, but very often this cannot be, or else the exactions of the patient and the self-devotion of love and kinship cast the entire weight of their care upon some single member of the family. A sister, aunt, or mother is gradually absorbed by the duties of the sick room until her life for years is passed in the gray monotony of some such self-imposed task. I do not say that

this should not be—right-minded people cannot fly from obvious duty—but I do strongly feel that the complete sacrifice thus made is not always best for the invalid, and is full of peril for the attendant; and that even where most demanded it is capable of being so modified as to be better for the one and safer for the other.

The evil begins in the curious selfishness which is apt to grow upon the chronic invalid, so as in many instances to make him or her more or less despotic in the household. Old invalids long and closely confined see their circle of enjoyments narrowing, and naturally shrink from the little social sacrifices of their personal wants which in common life every reasonable creature is continually making. They want some one to talk to, to read to them, and make their meals cheerful—above all, to sympathize with them. Their senses become acute, sounds and bright light disturb them, affection bends to their least wish, and they grow into despots, and little by little lessen, through their wants and fears and sensitiveness, the liberty of a household and the happiness of others. They reason, if at all, on the slightness of the calls they make on others, forgetful of their number; and thus, aided by the only too willing love about them, by degrees dominate a whole circle, and absorb, as it were, all the strength and sweetness of some one devoted life. It is easy for health and strength and love to bend and yield to pitiful weakness and pain, ever so easy for women

to sacrifice self, until at last, as time runs on, every interest in life concentrates upon the patient and the sick room. With this come irregular habits of living, neglect of exercise, and broken health. By and by the nurse falls ill of some disease, and we wonder over her case, forgetting how thoroughly such an existence prepares the way for illness, and how sure it is to make the onslaught terrible. The life I have so briefly traced in outline may come to be far worse and far more hurtful in the presence of certain forms of sickness, because certain types of malady bring with them to the too closely confined nurse injurious consequences which do not depend alone upon the annoyances inseparable from the life of the sick room. Among the diseases which are in all probability hurtful to the nurse, or at least to the relative who acts as such, and is in constant contact with the patient, breathing his breath and sharing his room, is the too common sickness known as consumption. This malady, which the sentimental novelist has taught the public to regard as a gentle fading away of the body without pain or distress, is usually one of the most distressing and horrible of the many modes of exit from this life. The tax it makes on the feelings and physical forces of the attendant is most severe, and is combined with a large addition of danger when the nurse, especially if of like blood with the sufferer, is closely confined to the sick room. There is indeed a belief universal among the people of some countries,

and shared by many physicians, that consumption is capable of being directly communicated when the attendant is a wife, for example, and is thus more often and more nearly than another in the company of the invalid. I cannot pretend to settle positively the extent of this peril, but I feel confident that it would be unwise to shut up with a consumptive anyone of the same family, and that hereditary tendencies to the disease should make such caution much more imperative.[1]

A good deal of the happiness and health of the attendant relatives in any disease may depend upon the mode in which the character of the patient is modified and altered by years of pain and sick-room trials, and such changes in the patient are influenced perhaps in some degree by the nature of the malady. Chronic sickness ennobles a few and debases the many; but as a rule long-continued or frequent and terrible pain is one of the most awful trials to which human nature can be exposed. We all see people who "suffer and are strong," who in the midst of torture think more of others than of themselves, and who, like Robert Hall, live beautiful and useful lives while never free from pain; but diseases in which, with pain, there is also great waste of tissue are more trying than those which

[1] These sentences embodying the opinions and observations long held by thoughtful physicians, were written and published many years before the discoveries which have made certain the contagious character of consumption. This contagiousness, it should be added, probably needs two things to make it dangerous: first, prolonged close contact with the patient; and second, a suitable soil for its after-development.

involve only pain; and under such influences the strong grow feeble of will, the bravest timid, the kindest irritable, and the best of us selfish.

During the Civil War many physicians had but too frequent chances of observing the sad effects of wasting maladies and painful suppurating wounds upon the character of men previously remarkable for hardihood and patient endurance. I had the sad opportunity to see in the Hospital for Nervous Diseases, in Turner's Lane, Philadelphia, a vast collection of cases of horrible forms of neuralgia from wounds, and to notice how often some form of fearful anguish, long continued, would convert a gallant, vigorous soldier into a creature so irritable, timorous, and hysterical as to tax to the utmost the gentlest nurse and the most patient doctor.

A life spent beside such a sick bed is indeed a test alike of character and of health. It requires a strong body and a fortunate balance of moral and intellectual qualities to escape from being made morbid by constant contact with such suffering; and intensely sympathetic people are surely hurt by it, and themselves grow morbidly sensitive. Where the unhappy invalid becomes exquisitely ill-tempered under the long pangs of illness, the constant nurse must endure a thousand petty trials of temper, and must know when to yield and when to resist the tiny and numberless oppressions of her sick tyrant. But incessant battle with oneself is exhausting, and soon begins to show its results upon the

healthiest nurse cooped up in the sick room. A pallid face, loss of energy, a certain passive obedience to routine duties are the sure consequences. In many forms of nervous illness among women the love of rule becomes curiously developed, and with it grows up apace a strange craving for sympathy and the expression of sympathy; and this peculiar mood of the sick room is especially hard upon the friend or relative who has been drawn into the maelstrom of monotonous duties, varied only by sudden and often vehement demands upon her emotions. If of the same blood and sex as the patient, and sharing in her constitutional peculiarities, the effects of such a life are only too easy to predict.

But is there then no escape from these mischievous consequences? People will get ill, and remain ill. There are others whose plain duty lies in attendance on such victims of misfortune, and I should be the last to counsel anyone to shrink selfishly from clear, though sad and painful, obligations. I fancy that few cases of the kind I describe ever occur without sufficient protest and competent advice from the doctor. But the force of custom and the dread of ill-tempered remarks are commonly too much for him, and he is only listened to with respect, to be disobeyed with certainty, like many another preacher.

As regards consumptives, of whom first I wrote, it is most desirable that as long as possible the nurse should sleep in an adjoining room within call, and

never in the sick room; most important that the chambers be well aired at all times, and that she should be, more than any other nurse, some hours of each day in the open air. The dangers of such cases are, however, better known and felt than are the more insidious evils of the other forms of disease to which I have drawn attention. Where the great misfortune of a chronic case of illness has fallen on a family, it is possible, when we have to deal with people of common sense and decision of character, to mitigate in some degree the essential evil of the situation. It were well in such cases to take care to distribute the burden, so that not on one person alone shall fall its entire weight. Usually, as I have said, some one relative gradually slips her shoulders more and more completely under it, until by mere force and duration of habit she becomes uneasy and impatient when any effort is made to relieve her, and resents the effort as an interference with manifest duties. I have seen many young lives fade and sadden under such tasks, and have felt indignant that others should stand by and see in silence the mischief they wanted vigor or unselfishness to prevent.

In some cases it is impossible to avoid consigning the case to a single relative, and when any one person thus deliberately or unconsciously passes into the slavery of the sick room, it is well that she should be made to feel how necessary it is for her to do everything to avoid the evils which such a life engenders. To

insist upon a certain and ample share of freedom and time for pleasures and duties outside of the sick room, of fresh air and exercise, are simple acts of duty to herself, and, in a higher sense, to her patient. Apart from the physical ills of confinement and never-ending, monotonous duties, it is good for no one to be too constantly in the society of any one person, and least of all in that of one necessarily made more or less morbid by illness. Just as change of climate is essential to bodily vigor, so change of moral climate is needful for health of mind, and the contact with a variety of people becomes of service to those who otherwise run the risk which comes of " set gray lives " and changeless days.

There is another evil, already alluded to, which falls heavily on the sick nurse, and which is very difficult to deal with. It arises from the self-concentration and growing selfishness which even the best of old invalids find hard to avoid, and which, especially if the sufferer be one in authority in the household, is sure to result by slow degrees in more or less interference with the happiness of others, and especially of the younger members of the family. It is to be met only, as far as I can see, by a clear comprehension of just what is due to suffering and morbid wants and emotions, and by an early and decisive way of checking all unfair and unneeded encroachments. To yield in everything to a chronic invalid is in a manner easy, and this is some folks' fashion of dealing with chil-

dren; but the final result is good neither for child nor for sick person, and, by enabling the latter to cultivate the resistible sources of annoyance and morbid emotions, is certain to result in enlarging for him by degrees the boundaries of misery. A little timely firmness from kind but steady-minded friends will do much to limit this cause of unhappiness to patient and attendants.

I am tempted to add a few words as to the yet greater necessity of not spoiling children because of sickness. In acute illness it may be well very often to let them have in many things "their own way," as the saying is, but as regards young people sick with chronic maladies for years, and perhaps likely to be ill or crippled for life, there can be no more fatal mistake. They, of all people, need to possess and to have aid in forming strong, self-sustaining characters—they, if any, are to be taught self-denial and restraint, unless we are willing to make them alike unhappy and the cause of unhappiness.

With such precautions, and a firm resolve to keep in view the manifest duty of taking care of her own mental and physical health, it is altogether possible for a woman in fair health to take honest charge of a chronic invalid; while without such determination the task I have described is most likely to end in making one invalid the more. Without proper management no one can endure such a life, and no physician who reads these pages but will be sure to recall only too many

examples of lives laid down in needless sacrifice by those who too willingly yielded themselves up to the tyranny of the sick room. I have elsewhere quoted the trenchant phrase of Wendell Holmes, in which he describes a chronic invalid as a vampire sucking the blood of the healthy people of a household; and strong as are his words, they do no more than briefly describe what really happens in many families.

There is another form of disease of which as yet I have said nothing, but which is so surrounded with peril for the watching friends that I should have failed in my task did I not most earnestly warn my readers of its dangers. When a case of insanity in any of its many forms falls upon some one in a household, certain questions at once present themselves which are closely connected with the subject of this brief paper. The physician is very soon called upon in these cases to decide whether the patient is in such a state as to make residence and treatment at home desirable, or whether recourse to an asylum is best. There is a growing tendency in the minds of thoughtful alienists to believe that many instances of aberration or of melancholy are best cared for in the patients' own houses; and if the doctor so decides, or if, as often happens, some time must elapse before he can come to a decision, the question of attendance becomes at once of the gravest moment. As to this there should be not the slightest hesitation. In either of the cases stated there should be selected a careful

and kindly attendant, who, if possible, ought never to be a relation or friend. The reasons for this are absurdly clear to a doctor, and are briefly these: a stranger has control over cases such as no kinswoman can obtain, and, unmoved by too great sympathy or emotion, is far more able to carry out discreetly and firmly the needed measures of relief. Moreover, for moral treatment it is usually needful more or less to isolate such sick persons, while it is plainly undesirable and imprudent to expose other individuals of the same blood, and possibly of like tendencies, to the emotions and states of mind which close confinement with those they love, but who are thus disordered, are sure to bring about. Like other physicians who meet with cases of nervous disease, I have been often called upon to witness the wreck of mind and body which the effort to fulfill such a task has brought about. Indeed, I can think of nothing more likely to insure loss of health than an effort on the part of a young person, especially if a relative, to nurse the insane. Here, if in any case, are present in their worst forms all the evils which make attendance on the sick a trial of physical and mental health. The greater the love for the sufferer, the more unwise for both is the trial, the greater for the nurse is the strain. The incessant watching, the weary waiting in this most sad and uncertain of all maladies, the terrors as to what may happen in a disorder so changeful, the alternations of hopes and fears, and the agony of battle with aberra-

tions and diseased opinions which it is vain to strive to change or influence, combine to torture the nursing friend; while close confinement and the usual unavailing effort to conceal the nature of the case, and the morbid horror which this disease creates, all unite to make such attendance sadly dangerous for those near of blood. In fact, no one should be submitted to so terrible an ordeal; and if it be impossible to create for a case of insanity an asylum within the house, with a paid attendant, then it is better, as soon as may be, to place the patient in some well-ordered hospital. The picture I have drawn is no sketch from fancy: many and many a life, and, worse than that, many a mind, has been wrecked in such service; while, as I have said, and would like once more to urge as the best of all reasons, it is impossible to devise a better plan for insuring the continuance of a case of mental disease than keeping the patient in the constant company of one or more members of the same family.

CHAPTER III

Camp Cure [1]

It is nowadays a common thing for city doctors to see numerous examples of overwork of body or mind, or of both at once; and if I was correct in the startling lesson I once drew from the death records of Chicago, there seems to be sad reason to believe that the nerve disorders which come of overwork, with worry, must surely multiply with the growth of cities and the keener competitions which such growth insures.

I am not now anxious to point out anew the defects in our modes both of work and play in America, but I am desirous once more of reasserting my strong and well-assured belief that, however evil may be these habits both for men and women, their peril gets a deadly emphasis from the character of the climatic conditions which surround us. Since my paper which excited so much comment, and reopened the great question of sex in education, I have become daily more sure as to this matter of the relation of climate to all forms of labor. It will well repay a fuller and more scientific examination than anyone has hitherto given

[1] See also "Out-door and Camp-Life for Women," p. 70.—Editor.

it, but at present I shall but pause to point out certain facts which bear upon the subject.

All over America the time of most severe and steady labor in the great cities is from early autumn up to late spring. Of course I refer to the labor of professional men, merchants of all kinds, dealers in money, and manufacturers. It begins to relax late in the spring, and it is just in these spring months that our population feels the curious lowering of tone which most of us know so well, but as to which little or nothing is said in our books of medicine, though in older days it led to the endless doses and bleedings which were the spring fashion, and which yet linger in unwholesome vigor in some country villages. This sense of weakness, this springtide indisposition to work, may be partly due to a malarious element which is present and in force over a large part of our country. It would be well worth some inquiry to learn if in countries totally free from ague poison the breaking up of winter weather be thus efficient to weaken. There must, however, be other elements than malaria concerned—others that are widespread, too, and possess potent influence over the nutritive changes of the human frame. At all events, in America, no one doubts the tendency of the general health standard to fall at the season named. Here, again, the immediately active causes, and the method of their effects, would repay more careful study. Mere feelings of weakness may be perhaps delusive, but I have in my possession some evidence

to show that in America—at least in Philadelphia, with cold winters and very hot summers—there is a yearly change in weight, the whole population beginning to lose flesh in spring, and continuing so to do as the summer advances, to regain the lost material in the cooler wintry days. There is, too, a curious piece of statistical evidence as to the depressing power of the spring months which has but lately come to light. Among the more frequent of the curable nervous disorders is that known as chorea, and once as St. Vitus's dance. It is stated in the books to occur most often in winter, but the books were chiefly European or a closet hash of those, so that it need not surprise us to find them often wrong as to the habits of disease on this side the seas. A great number of choreal cases are subject to relapses, and from an examination of the records of some years at my clinic it was found not only that the relapses occur in spring, but also that a vast proportion of the new cases take place at that season.[1] Since chorea is a disease having no relation to malaria, these facts become the more striking; and are the more so when we find that any enfeebling causes act to evolve this disease or aid to insure its recurrence.

Thus it is that upon people whose nervous systems have passed through the wear and tear of the winter campaign of work and worry there comes first this curious spring influence, and then the moist heats of

[1] Article on Chorea, by Dr. Gerhard, in *Philadelphia Medical Times.*

our summer suns. The work in this country has to be done, and whether it is done wisely or not, or whether the habits of the mass admit of its being wisely done, little concerns us here. It gets done, and the doing of it by summer time puts men in the way of needing a thorough renewal of overused tissues; for, although in theory Nature is supposed by her admirers to be steadily supplying fresh substance for that which we expend in thought, emotion, muscle or gland work, it does probably happen that in all men to a certain degree, and in some in larger measure, there are infinitely minute defects in these processes, or that the constancy of too great activity of mind and body does not always allow of perfection of repair. This is to be had by long rest and a healthful change for a time in the mode of living. The evil which was made by artificial ways of life is but awkwardly helped by urging tired nerve centers to their work with tonics or stimulants, and is rather, as I suppose, to be cured by a prompt reversal of all our comfortable manners of eating, sleeping, and being housed.

I do not presume that our naked ancestors, who made stone axes and slew their beasts in close battle, were on the whole as long lived as we, but they did not have overtasked nerves, and probably their women rejoiced not in hysteria. At all events they escaped some things which we owe to increasing needs and to the number of those who want and cannot get the same prizes. They fell wounded often, no doubt, in

their fights for daily beef; we drop in the struggle for champagne and luxury. The injured stonecarver, used to outdoor life, would have died, snuffed out, in our best sick ward; while, on the other hand, he could have kept in cave, hut, or lake dwelling a most successful hospital for the man hurt in Wall Street or the overworked lawyer or merchant.

The surest remedy for the ills of civilized life is to be found in some form of return to barbarism, and the common sense of the mass of people has taught them this; but they use the remedy in a weak form, and therefore fail of the larger good its ampler use might give. Tired men and women, fearful of summer heats, make escape to the country and undergo prolonged cremation in boarding house or hotel. It is better than nothing, and some people like it, or say they do. But though our so-called country life secures fresher air, it insures a large supply of new irritations and annoyances, while for vast numbers of men it means uncomfortable nights in a suburb, hasty breakfasts, a daily railroad dusting, and the hot, long, weary day in town. It is better than to be in the city all the twenty-four hours, but while it may help, and cannot hurt, it is a life which will not act as a complete remedy for those who are at all seriously exhausted, or for such as are beginning to feel the first inroads of any of the many ways in which worried work torments us. One wants something more than a few days at dry Atlantic City or murky Cape May. One wants more

than eight by ten to sleep in, and society of a kind one does not crave, and the delights of unlimited boarding-house gossip. Civilization has hurt—barbarism shall heal. In a word, my tired man, who cannot sleep, or who dreams stocks and dividends and awakens leg-heavy, and who has fifty other nameless symptoms, shall try a while the hospital of the stonecarver. He shall reverse the conditions of his life. Wont to live in a house, he shall sleep in a tent, or, despite his guide's advice, shall lie beneath "the moon's white benediction." So shall he be in the open air all day and all night, for the tent is but a mere cover and wind-guard, or scarce that. He shall rise when he likes, unstirred by imperious gongs; but I think he will be apt to see the sun rise, and, honestly tired from travel or food-getting, will want to turn in at eight or nine. If too warm, he will take his coat off; if cold, to replace the demon furnace in the cellar, with its breath of baked air, he shall find warmth in the "ruby wealth of roaring logs" he has helped to chop and carry. The best part of his meals he shall earn by sweet labor with his rod or his gun. His shall be the daily plunge in lake or river, and the intense, eager hungriness which has no quarrel with the *menu* of wood or stream. The sleep that is dreamless, the keen senses, the Arab vigor that makes exercise a jest and the mindless work of the camp a simple pleasure—all these are the reward which comes to a man who is living the outdoor life of the camp by silent lake or merry river,

or far in the noiseless deeps of northern forests rich with scent of pine and the fragrant wood odors of the moldering logs of the windfall.

This indeed is a true and potent alterative; and just what it is in detail—how full of harmless and health-giving enjoyments and of novel surprises—will bear a little comment. It is an odd thing at first to feel you are living out of doors with no builded home to sleep in; but this simple fact is full of value. In our common, everyday life of house and street we practically change our climate whenever we leave or enter a house, and from this, with overheating of our homes, come, I suspect, the many little colds and nasal catarrhs to which most of us are liable. The dweller in tents has no such annoyance, and far from the constant exposure giving rise to diseases of lung or throat, the outdoor life seems to be an almost absolute insurance against these. Yet the changes of temperature are often enormous, but as they are always natural, and unaccented by going into and out of houses, their lack of abruptness seems to deprive them of danger. On the northwest shore of Lake Superior the midday temperature in August was often 70° to 80° F., and the minimum of the night 39° to 65° F.; yet, as I remember, no one of a large party suffered in any way. Both on our seacoast and in Maine this is well understood, and is often practically applied; so that it is thought to be best for persons recovering from inflammatory rheumatism to live on the sounds for a while

or out in the woods, and as soon as possible to loosen the stiffened joints by handling an ax.

Not only are well people better for such steady exposure, but cases of chronic throat trouble, catarrhal disorders, and chronic bronchitis rapidly disappear under the natural and mild treatment of what, for brevity, I have ventured to call the Camp Cure. I have more than once seen alarming coughs simply vanish after a few nights in camp, while, on the other hand, it was a common thing among our men and officers during the late war to find that a leave of absence and the exchange of tent life for house life frequently brought about colds or coughs. I well recall also a case of chronic loss of voice which for years had baffled many wise doctors and was perfectly and permanently cured by three weeks in camp on the Potomac. During the war it was a subject of frequent surprise to civil surgeons to see how speedily wounds healed when men were living in tent hospitals, and how potent was their use in dispelling and checking the progress of that horror of all surgical horrors, hospital gangrene. I have several times had occasion to remark while in camp upon the same quick healing of wounds, and to see injuries which at home would have sent a man to bed get well without the slightest annoyance and with singular rapidity. The evils which are naturally dreaded as results of camp life have in reality no existence.

Quite as sure is the relief from dyspeptic troubles;

for although the diet of camps would be at home, for the dyspeptic, but a mode of tardy suicide, the steady, not too severe, exercise and the constant exposure rarely leave a man after a few days much fault to find with the most evil-disposed stomach. Among our lakes and streams the bill of fare of the camp is by no means a bad one, but it would be shocking at home. There is always fish fried, or broiled if you are wise; or perhaps, if you have a taste for delicacies and want the trout at its best, you will cook it in paper—when it is a thing to remember. Birds, especially ducks, are rarely lacking, and in the Adirondacks venison is abundant enough. Then it is easy to carry canned and dried vegetables, beans, potatoes, biscuits for bread, condensed milk, and the inevitable pork. If I wanted a comparative test for the absence of dyspepsia, I should say that when a man can relish a bit of well-fried, crisp pork on top of a stew of ducks, and can wind up with a big onion eaten raw with salt, he might be regarded as tolerably competent to compete with the proverbial ostrich. I think it was that good fisherman, the late Dr. Bethune, who said that a good part of the value of wood life was in the fact that you crave onions and can eat them. In fact, there is always a row in camp when the onions give out, and the new men often wonder, at starting, why an old woodsman is so very particular about having plenty of onions; but in the wilderness and in armies onions are at a premium. I remember once, in paddling along the shores of a lake in

Maine, we spied a log cabin in a rough clearing, and, pulling the canoes up, set off to see who was about, with that odd craving for new faces which haunts men after a few days of lonely wood life. We found four children with measles, the mother recovering from pneumonia, the father down with a lively chill imported from Illinois, and the grandfather with a dislocated finger. We soon put the last right, and then, drawing water cool from the spring, with a few lemons and white sugar we made them a drink which called down upon us unnumbered blessings. Next my little medicine case came into use for the first time in several summers; and so by and by, leaving them our remaining lemons—may I never do a deed of greater self-denial!—we went away. As we were shoving off, the old man came down the hill and stopped us—guessed, as we were doctors, we ought to be paid. "Well," he said, "you done us a heap of good, and we was kind of mournsome before you come." I felt that the new word *mournsome* was worth many fees, and so guessed, in reply, that we wouldn't take anything. "But maybe you'd have this," he urged with an air of triumph. "*Them's* what no man'll refuse"; and so saying he threw into the canoe a rope of somewhat ancient onions. I accepted the honorarium, and we paddled away down the lake.

The fare, then, need not be meager. As to drinks, I find that a very little liquor goes far, and is not much desired save by guides; and I know some of them who

always refuse it when they are with a party. Tea and coffee are easily carried, but in the early morning a pint or so apiece of chocolate, made with condensed milk, is found to be the favorite breakfast draught. I do not advise anyone to venture it at home, but rich and hot—and how very hot it is!—there is nothing better of a cool morning about 6 A.M. When coffee is used, it is a good way to boil it with the milk, without water; it makes a delicious variety, and was taught me by a Canadian trapper. At the risk of being tedious as to diet, I take from my notebook this bill of fare on the St. John's at the Rocks of the Virgin: Boiled and broiled salmon; trout in paper; fried potatoes; a stew of wild ducks with peas, and a can of beef soup to strengthen the potage; biscuits; baked beans; black coffee; and raw onions for salad.

Most of us, however, seek the woods because of weary brains, and the contrast they give of a perfect simplicity in place of the multitudinous tasks of the city is the surest and the most permanent of cures for the evils which thus arise. In the woods, with good guides, there is nothing which you *must* do, and a vast deal involving gentle exercise which you *may* do or not as you choose. Our city life has become perplexing and trying by its intricacy: so many wheels must be kept moving in order to the fulfillment of social, domestic, civil, and professional duties that in the hurry of well-filled lives we are rarely at rest. I have heard a great *savant* complain of this ceaseless variety of de-

mand, this intricacy of life, as the curse of London existence. Nor, with our habits of work, are we any more likely to escape from it than the Londoner. Out of this atmosphere of exaction and haste and endless perplexity, of oftentimes conflicting duties and obligations, you pass into the quiet of woods remote from men, of streams and lakes scarcely troubled by commerce. The peace of soul which falls upon you must have been felt to be duly valued, nor can anyone who has not known it conceive of the ease with which he forgets the cares and worries of the life he has left. The irritability and sense of strain alike fly swiftly away, and very soon he finds himself wondering over the remembrance of the petty cares, the jealousies and strifes of the city's battle for bread or name. I may be pardoned if I add that after one of those appalling and devastating sorrows which are sure to drop some day into every man's life, the flight to the open air and the close communion with Nature which it brings are full of healing.

There is a strange charm for the dweller in town in living a while hand in hand with Nature all day long—in watching her gradual changes, the birth of morning, the sunrise newly dressed each day, the fading twilight, the growth of storms, the loveliness of form and color in wood or wave—all delightful, and ever more so when the camp circle chances to possess an artist or two, and enough of science to weight the talk a little at times. It is well also to have always

some little purpose in the woods besides mere pleasure. Some men like the gun and the rod. I prefer the latter, but I have friends who find unceasing pleasure in their pursuit of botany. Photography would be the best of wood pursuits if only it involved less cumbrous baggage; but for those who sketch, that is a surpassing gain. A book or two of geology is also desirable, and I have found it convenient and agreeable to carry in a small case a compass and barometer and a minimum thermometer, and, if possible, a simple microscope. All these little aids help to pass away the hours which nothing can make heavy or wearisome. I may add another hint: too few of us sketch, and, as I do not, I have always carried a notebook, in which I have found great delight, not merely in noting the day's pursuits, but in sketching with the pencil in words the scenes through which I have passed. It is a capital exercise, and it is curious to see how, when you sit down and try to put in words just what you see before you, it fixes the landscape forever in your memory.

While speaking of men's ways in camp I should not neglect to say how much of its enjoyment comes of the contact with the guides, woodmen, and trappers, and the simple-minded, manly folk who live on the outposts of civilization—"the lords of the ax and the rifle." One friend at least who may read this paper will recall our guide at the Pictured Rocks—a gnarled, rugged old fellow, by turns a lumberman on the wild

Madawaska, a beaver hunter who believed in beavers more than in men, a sergeant in Berdan's Sharpshooters, and now lake-sailor, guide, and hunter—a keen eye with the rifle, gallant and cool in storms on the lake, a capital cook, and endlessly merry and full of good talk over the camp fire at night. He will recall, too, Mr. S——, our guide on the north shore, with his keen scent of the profitable pine tree, his amazing certainty as a wood guide, and his quaint tales of "finds" among the pine woods or of mineral wealth on the shores of lake and river. The forests of Maine are full of the finest specimens of such men; nor do I know any better thing than to float down the lovely Allegash with Dan Kennedy, guide and woodman, in the stern of the canoe, and to hear with the plash of his paddle his clever chat of moose and bear and lumbering and the ways of fish, and scornful talk of "Kanucks" and "Injins."

As well to say here that he who means to live a while in the woods will do well to be careful as to whom he chooses as a guide. In Maine especially the least exercise of caution or a little inquiry will insure a successful choice. As to companions, cheerful, pleasant, and unselfish, one can rarely go astray in choosing; but since in many wood journeys the traveler's life is or may be in peril, or be put to great inconvenience and discomfort if he has not for guide an experienced person, too much care cannot be used. Some of my friends will recall how narrow an escape we once made

on Lake Superior, owing largely to an incompetent sailor; and on the other hand I remember with constant pleasure the dexterous and gallant fellows who have been with me again and again on the quick waters of the Allegash and the great St. John's.

I do not wish or pretend to give directions as to the needed outfit for camp life, which may be better learned from any of the many books which describe the fishing in North America. There are, however, one or two things which, as a physician pointing out a too-little-used means of health-getting, I cannot afford to pass over, since in the books alluded to they are scarcely mentioned. As regards clothing, never go into the woods without flannel garments. It is well, no matter how cool it be, to partially undress at night, relying upon a rubber blanket beneath, and two good woolen blankets, one over and one under you, for warmth. A caoutchouc pillow is also a great gain, both as a head-rest at night and to sit on in the daytime, especially in a boat or canoe. It is well also to make it a rule of the party, no matter how cold be the water, to bathe daily. In fishing camps generally there is some neglect of cleanliness—the *débris* of meals left about and lack of care in daily airing the blankets. It is wise, therefore, to shift the tents every three or four days to new ground—a precaution which is rarely used, and should never be neglected.

My main purpose in this somewhat rambling paper is, however, to insist upon the great value to people in

and out of health of the kind of life I have so hastily sketched. It will have some variety of charm for all men, and indeed for many women; and while it will be fullest for those who are gifted with keen powers of observation, or who, as I have said before, can bring into it some special pursuit, I do not envy him who between a few good books, a pipe, and a friend, and

> Skies above with endless change,
> And woods below with joyous range,

and the sights and sounds of outdoor life, cannot contrive to pass away agreeably two or three summer weeks. Amid all the social pleasures of such a life I remember with most distinct gratification the social life of the camp, the evening chats about the camp fire, the jest and story, the trappers' tales, the laugh over improvised dishes, the ghostly splendor of light and shadow made by the fires, on which vast tree trunks were piled to warm and cheer us. I recall, too, most gratefully, how near this close intercourse has brought me to many good and kindly men, when the punch was brewed and the cheerful pipes glowed and faded by turns, like the gleam of revolving lights on some distant shore, seen and lost, as it were, now and again.

The choice of a place in which to get one's summer "outing" is of course important. The Adirondack woods are probably the most available, as being easy of access, but of these I know personally but little.

They have been pretty fully advertised in a work of fiction by a reverend gentleman in Boston, who describes trout as leaping some few feet out of water, and who shoots loons with a rifle from a rocking boat, in a thunderstorm, at night, by the lightning flashes. Yet the reality is pleasant enough, and there is room to get away from tourists and parasols. The woods of Maine are also easy of access, guides good, and the sport sufficient, especially anywhere about the shores of Moosehead Lake. For those who, like myself, prefer to wander, and not to camp steadily in any one place, there is a delicious journey which I have twice made, and which takes from two to three weeks. In the summer of 1869, with one friend, each of us having a good birch canoe and a guide, I crossed the " carry " at the head of Moosehead Lake and launched the canoes on the Penobscot. At once we were in a wilderness which in winter is peopled well with hardy lumbermen. A few hours' paddling brought us to Chesuncook Lake, and then turning northward, past grim Katahdin, we went against stream through a series of lakes, connected by narrow waterways. A wearisome portage across the well-named " Mud Carry " led us over the low watershed of the Penobscot and St. John's into the tributaries of the latter stream. The current was then with us, and day after day we paddled through still lakes and waters until, emerging into the Allegash, we fled away swiftly down its brown-tinted waters. A more delicious panorama than its quick rapids and its

overhanging, silent forests dwells nowhere in my memory. The scenery was not abrupt until, a few miles above the mouth, we halted to carry around a charming waterfall. A little farther, we floated out into the noble Aroostook or St. John's, which gave us for days a splendid ever-shifting picture of hill and river—a river, too, so swift that it seemed to fall away from us like a sloped mirror. By and by farms appear, and you find yourself in the land of the poor and courteous Acadians, who were carried here when Evangeline went away to the South. At once you are in a foreign country. You glide along past quaint, red-painted wooden churches, carved gables—the priest's house known by its chimney painted to imitate brick—odd little spires covered with zinc and gleaming in the sun, and graveyards thick with wooden crosses, against a somber background of rolling, leafy hillsides. French, the strangest of French, is the only tongue, but a kindlier or better-mannered race than this, and a poorer, you must seek far to find. At the Grand Falls there is a cataract which drops into a slate chasm. The river, narrowed to a gorge, makes one fierce plunge, and then boils for miles down its narrowed valley. Just below the fall the gorge makes an abrupt turn, so that, standing below this splendid cascade, you seem to be caged in a vast gulf of splintered slate rocks piled on end. Excepting Niagara, I know of no cascade which approaches this in grandeur or savage grimness. At Frederickton you may take the steamer to St.

John's, and thence to Portland, or cross from Woodstock by rail to Bangor. The rapids are many on this route, but not dangerous, and the canoe after a day or two is the most pleasant of boats. The traveler sits on the smooth rounded bottom of his frail craft, and leaning back on a shingle, placed against one of the crosspieces which tie the sides of the canoe together, he reposes at ease, facing the bow of his boat, paddling or smoking, sleeping or reading, as suits his idle mood.

There is one serious drawback in Maine and the provinces. Up to August the black fly reigns in supremacy of torment, aided in his cheerful business by the " no-see-'um " or midge—the pungy of Pennsylvania—and the milder mosquito. The black fly rules the day, the mosquito prevails most at night, but is lively enough at all hours, while the midge is in force at dawn and twilight. There are those who despise the black fly and scorn the mosquito, but I know not the hero who can be a saint with the midge at his wicked worst. These creatures may have a useful alterative value, and I suppose there is such a thing as getting used to the whole trio—indeed, it is said that the mosquito which bites a Jerseyman drops dead on the spot; but I have heard the same thing said as to rattlesnakes, which seems improbable, so I vouch not for this—but I prefer the woods when the black fly, at least, has fled. The cool August nights usually disperse the midge also, but the mosquito is a power till September.

On this account, and others, I like the shores of Lake Superior rather than the woods of the Northeast. I have camped year after year on the north shore of Lake Superior, and have never been annoyed by biting things after August 10th, unless I had gone deep into the woods. Then the nights are cool or cold—the lake water so chilly as to range on the north shore from 39° to 55° F., being therefore always pleasant to drink, and too cold for more than a plunge bath, followed by a shuddering escape. The scenery also is varied and grand, and the boat journeys may be easy and safe or venturesome and dangerous. Duluth is one good starting point, and the fisherman may find good sport within thirty miles up the shore in the little rivers which seek the lake. Sault Ste. Marie, where there is a good inn, the Chippewa House, is another pleasant point, whence within a few miles good fishing and camping grounds are found, with plenty of guides, canoes, and other means of outfit. For those who have more time and are fond of longer voyages the Nipigon River is an admirable resort, easily reached by the Canadian steamers which call at Sault Ste. Marie. There is one noble journey which I made once in the pleasantest of company, and which no one could regret to have made. We took a boat and guides at Fort William on the north shore, and spent two weeks in journeying to Duluth. Sailing ten or fifteen miles a day, we camped each night at the mouth of some one of the numberless streams which flow eastward to

the lake. Every one of them has cascades near the lake, and two of these—Temperance River (so called because there is no bar at the mouth) and the River of the Evil Manitou—plunge almost into the lake. The lake walls are perilously bold, and sometimes offer no shelter for many miles, so that the utmost care is needed in watching the winds and waves. The scenery is superb. The basalt rocks of Thunder Bay, the Falls of La Crosse, Baptism and Pigeon rivers, the Palisades and the rocky islands, golden or silvered with orange or white lichens, and the wonderful water effects and frequent mirage, are not to be matched elsewhere in America, and will repay, as I think, the grave danger of the voyage.

I have especially dwelt on these two boat journeys, because they open to us scenery as yet accessible in no other way. The day will come when these picturesque shores of the great lake will be profaned by tourists, but as yet few civilized men have seen the lovely gorges of La Crosse, where the old bishop found shelter and erected the cross which gave it name, and has long since crumbled. Nor have many camped on the shelving beach where the River of the Evil Manitou has torn the lake wall asunder, and makes its plunge of sixty feet within fifty yards of the lake.

There is another wonder of beauty on the south shore which lies between Sault and Marquette—say two days' sail from the latter town. Coasting along this singular coast line, known as the Pictured Rocks,

in a steamer, I became so enamored of their romantic beauty that in August of the next year, with two friends, I sailed to them from Marquette. I should like to give the reader some idea of this coast, and without pretense of accuracy should wish him to be made to feel and to be tempted by the deliciousness of the week spent on Chapel Beach. Lacking the skill of the pencil, I have been, as I said, in the habit of taking sketches in words which, glanced at afterwards, swiftly recall the scene. Here is one such sketch but very little altered. The canoe lies a hundred yards off shore, silent, on a lake so still that the bowlders thirty feet below me show in every detail of silvery shadings. No sail in sight; time, 7 A.M.; the water at 68° F.—warmer here than on the north shore, but still so cool that the quick paddle after the bath and before breakfast is luxuriously warming. Before me a half mile of beach of a creamy pinkish hue, because of quartz and red porphyry pebbles; back of it a bluff of sandy yellow and white, wonderful on top for gnarled trees, abused by lake storms, and for its many and delicious berries. On the upper beach slope below the bluff is the white tent, sole sign of man save the lovely blue inverted cone of dense smoke which floats up from the camp fire, where the kettle sings and the fish are frying. To the right, the strange Nubian profile which notches the vast angular rock, out of which, a little farther, is scooped the great arch of the Grand Portal. Thence a line of strange forms and

lovely tints for miles. To my left, a cascade drops on the beach from the crumbled bluff, and beyond it rise vast stone pillars twenty feet above the lake, and over them a roof of stone, and on top of that forest trees —a strange Druidic temple, which came back into my memory when next I saw Stonehenge. Again to the left, rocks worn and water carved of old into strange semblance of tower and citadel and mosque and castle. For beauty and fantastic strangeness I know nothing like this picture, which can be seen only by one who is willing to live a while in boats and tents, for the sight as viewed from a steamer is somewhat disappointing. To camp on this delicious beach and to float along the line of these amazing rocks, watching them in various lights, will give a man such a store of pictures as the richest gallery may envy. The rocks themselves are silvery gray, and are water-worn below into somber caverns full of rounded arches—arch within arch, beside which the water, crystal clear, casts up from its floor of white stones opalescent lights, while on the upper cliff line the chisel of time and weather has carved such strange confusion of architecture that the fancy, free to range, finds no end of bold and marvelous buildings, beneath which glide rare waterfalls, and around which are "high-walled gardens green and old." The colors which aid and flatter these delusions are due to the ores of iron, manganese, and copper, which, washed out by the rains, trickle through the many-leaved horizontal strata onto the face

of the white cliffs, and so give us tints of yellow, brown, purple, green, and the hues which these divers comminglings afford. For a while I was puzzled at the frequent figure forms which occur everywhere on the more exposed and smoother rocks. One group was like a vast procession of bending, black-cloaked figures, before which went a headsman with his ax; they seemed to be walking over a vast ice slope, and the delusion was something bewildering in its completeness. In one of the caves were, as I remember, grim frescoes, all in shades of gray and black, of such vast wrestling figures with claw feet and hands as are frequent in Japanese pictures. The human figures are made in this wise: On some of the cliffs orange lichens abound, and where water oozes out in small amount between the strata the moisture, spreading as it slowly descends, is marked by a very black lichen, which fades below as the water dries, and thus affords the quaint figures of cloaked men so common on these singular rocks.

Camp life, at least on this part of the south shore, depends for its zest solely on the scenery and the charm of air and water and sky, since the fishing amounts to but little along the line of the Pictured Rocks. But if a man desire to camp a while in Fairyland, this will come near to satisfying the want. About halfway to Marquette, Grand Isle is also an attractive camp ground, and is full of queer and half-explored rock scenery.

I have said nothing thus far of camp life nearer home, in Pennsylvania. It used to be good and pleasant in Elk and McKean counties, but the locomotive has gone long since through these woody solitudes, so that I do not know as much of them as I once did. Yet in many places throughout the Allegheny range and elsewhere there must still be wood and water where the tired dweller in towns may pitch his tent and lure the speckled trout, and learn the lore of woods, and taste the poetry and wholesomeness of the cure of camps.

Part III

CAMP COMFORT

BY

STEWART EDWARD WHITE

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CHAPTER I

Camping Comfort in the North Woods

Wear Woolen Garments—A Sweater Indispensable—Other Things You Need—The Best Tent—Insect Pests and Dope—How to "Hike"—Carrying the Pack a Matter of Experience.

You will want a hat, a *good* hat to turn rain, with a medium brim. If you are wise, you will get it too small for your head, and rip out the lining. The felt will cling tenaciously to your hair, so that you will find the snatches of the brush and the wind generally unavailing.

By way of undergarments wear woolen. Buy winter weights even for midsummer. In traveling with a pack a man is going to sweat in streams, no matter what he puts on or takes off, and the thick garment will be found no more oppressive than the thin. And then in the cool of the woods or of the evening he avoids a chill. And he can plunge into the coldest water with impunity, sure that ten minutes of the air will dry him fairly well. Until you have shivered in clammy cotton you cannot realize the importance of this point. Ten minutes of cotton underwear in cold water will chill. On the other hand, suitably clothed in wool, I have waded the ice water of North Country

streams, when the thermometer was so low I could see my breath in the air, without other discomfort than a cold ring around my legs to mark the surface of the water, and a slight numbness in my feet when I emerged. Therefore, even in hot weather, wear heavy wool. It is the most comfortable. Undoubtedly you will come to believe this only by experience.

Do not carry a coat. This is another preconception of civilization, exceedingly difficult to get rid of. You will never wear it while packing. In a rain you will find that it wets through so promptly as to be of little use; or, if waterproof, the inside condensation will more than equal the rain water. In camp you will discard it because it will impede the swing of your arms. The end of that coat will be a brief half hour after supper, and a makeshift roll to serve as a pillow during the night. And for these a sweater is better in every way.

In fact, if you feel you must possess another outside garment, let it be an extra sweater. You can sleep in it, use it when your day garment is soaked, or even tie things in it as in a bag. It is not necessary, however.

One good shirt is enough. When you wash it, substitute the sweater until it dries. In fact, by keeping the sweater always in your waterproof bag, you possess a dry garment to change into. Two handkerchiefs are enough. One should be of silk, for neck, head, or—in case of cramps or intense cold—the

stomach; the other of colored cotton, for the pocket. Both can be quickly washed, and dried *en route*. Three pairs of heavy wool socks will be enough—one for wear, one for night, and one for extra. A second pair of drawers supplements the sweater when a temporary day change is desirable. Heavy kersey "driver's" trousers are the best. They are cheap, dry very quickly, and are not easily "picked out" by the brush.

The best blanket is that made by the Hudson Bay Company for its servants—a "three-point" for summer is heavy enough. The next best is our own gray army blanket. One of rubber should fold about it, and a pair of narrow buckle straps is handy to keep the bundle right and tight and waterproof. As for a tent, buy the smallest shelter you can get along with, have it made of balloon silk, well waterproofed, and supplement it with a duplicate tent of light cheesecloth to suspend inside as a fly-proof defense. A seven-by-seven, three-man A-tent, which would weigh between twenty and thirty pounds if made of duck, means only about eight pounds constructed of this material. And it is waterproof. I own one which I have used for three seasons. It has been employed as tarpaulin, fly, even blanket, on a pinch; it has been packed through the roughest country; I have even pressed it into service as a sort of canoe lining; but it is still as good as ever. Such a tent sometimes condenses a little moisture in a cold rain, but it never "sprays" as does a duck shelter; it never leaks

simply because you have accidentally touched its under surface; and, best of all, it weighs no more after a rain than before it. This latter item is perhaps its best recommendation. The confronting with equanimity of a wet day's journey in the shower-bath brush of our Northern forests requires a degree of philosophy which a gratuitous ten pounds of soaked-up water sometimes most effectually breaks down. I know of but one place where such a tent can be bought. The address will be gladly sent to anyone practically interested.

As for the actual implements of the trade, they are not many, although of course the sporting goods stores are full of all sorts of "handy contrivances." A small ax—one of the pocket size will do, if you get the right shape and balance, although a light regulation ax is better; a thin-bladed sheath knife of the best steel; a pocket knife; a compass; a waterproof match safe; fishing tackle; firearms, and cooking utensils comprise the list. All others belong to permanent camps, or open-water cruises—not to "hikes" in the woods.

The items, with the exception of the last two, seem to explain themselves. During the summer months in the North Woods you will not need a rifle. Partridges, spruce hens, ptarmigan, rabbits, ducks, and geese are usually abundant enough to fill the provision list. For them, of course, a shotgun is the thing; but since such a weapon weighs many pounds, and

its ammunition many more, I have come gradually to depend entirely on a pistol. The instrument is single shot, carries a six-inch barrel, is fitted with a special butt, and is built on the graceful lines of a 38-caliber Smith & Wesson revolver. Its cartridge is the 22 long-rifle, a target size, that carries as accurately as you can hold for upward of a hundred yards. With it I have often killed a half dozen of partridges from the same tree. The ammunition is light. Altogether it is a most satisfactory, convenient, and accurate weapon, and quite adequate to all small game. In fact, an Indian named Tawabinisáy, after seeing it perform, once borrowed it to kill a moose.

"I shootum in eye," said he.

By way of cooking utensils, buy aluminum. It is expensive, but so light and so easily cleaned that it is well worth all you may have to pay. If you are alone, you will not want to carry much hardware. I made a twenty-day trip once with nothing but a tin cup and a frying pan. Dishes, pails, washbasins, and other receptacles can always be made of birch bark and cedar withes—by one who knows how. The ideal outfit for two or three is a cup, fork, and spoon apiece, one tea pail, two kettle pails, and a frying pan. The latter can be used as a bread oven.

A few minor items, of practically no weight, suggest themselves—toilet requisites, fly dope, needle and thread, a cathartic, pain-killer, a roll of surgeon's bandage, pipe, and tobacco. But when the pack is made

up, and the duffel bag tied, you find that, while fitted for every emergency but that of catastrophe, you are prepared to "go light."

The question of flies—using that, to a woodsman, eminently connotive word in its wide embracement of mosquitoes, sand flies, deer flies, black flies, and midges—is one much mooted in the craft. On no subject are more widely divergent ideas expressed. One writer claims that black flies' bites are but the temporary inconvenience of a pin prick; another tells of boils lasting a week as the invariable result of their attentions; a third sweeps aside the whole question as unimportant, to concentrate his anathemas on the musical mosquito; still a fourth descants on the maddening midge, and is prepared to defend his claims against the world. A like dogmatic partisanship obtains in the question of defenses. Each and every man possessed of a tongue wherewith to speak or a pen wherewith to write, heralds the particular merits of his own fly dope, head net, or mosquito-proof tent lining. Eager advocates of the advantages of pork fat, kerosene, pine tar, pennyroyal, oil of cloves, castor oil, lollacapop, or a half hundred other concoctions will assure you, tears in eyes, that his is the only true faith. So many men, so many minds, until the theorist is confused into doing the most uncomfortable thing possible—that is, to learn by experience.

As for the truth, it is at once in all of them and in none of them. The annoyance of after effects from

a sting depends entirely on the individual's physical make-up. Some people are so poisoned by mosquito bites that three or four on the forehead suffice to close entirely the victim's eyes. On others they leave but a small red mark, without swelling. Black flies caused festering sores on one man I accompanied to the woods. In my own case they leave only a tiny blood spot the size of a pin head, which bothers me not a bit. Midges nearly drove crazy the same companion of mine, so that finally he jumped into the river, clothes and all, to get rid of them. Again, merely my own experience would lead me to regard them as a tremendous nuisance, but one quite bearable. Indians are less susceptible than whites; nevertheless, I have seen them badly swelled behind the ears from the bites of the big hardwood mosquito.

You can make up your mind to one thing—from the first warm weather until August you must expect to cope with insect pests. The black fly will keep you busy until late afternoon; the midges will swarm you about sunset; and the mosquito will preserve the tradition after you have turned in. As for the deer fly, and others of his piratical breed, he will bite like a dog at any time.

To me the most annoying species is the mosquito. The black fly is sometimes most industrious—I have seen trout fishermen come into camp with the blood literally streaming from their faces—but his great recommendation is that he holds still to be killed. No

frantic slaps, no waving of arms, no muffled curses. You just place your finger calmly and firmly on the spot. You get him every time. In this is great, heart-lifting joy. It may be unholy joy, perhaps even vengeful, but it leaves the spirit ecstatic. The satisfaction of *murdering* the beast that has had the nerve to light on you just as you are reeling in, almost counterbalances the pain of a sting. The midge, again—or punkie, or " no-see-um," just as you please—swarms down upon you suddenly and with commendable vigor, so that you feel as though red-hot pepper were being sprinkled on your bare skin; and his invisibility and intangibility are such that you can never tell whether you have killed him or not; but he doesn't last long, and dope routs him totally. Your mosquito, however, is such a deliberate brute. He has in him some of that divine fire which causes a dog to turn around nine times before lying down.

Whether he is selecting or gloating I do not know, but I do maintain that the price of your life's blood is often not too great to pay for the cessation of that hum.

" Eet is not hees bite," said Billy, the half-breed, to me once, " eet is hees sing."

I agree with Billy. One mosquito in a tent can keep you awake for hours.

As to protection, it is varied enough in all conscience, and always theoretically perfect. A head net falling well down over your chest, or even tied under

your armpits, is at once the simplest and most fallacious of these theories. It will keep vast numbers of flies out, to be sure. It will also keep the few adventurous discoverers in, where you can neither kill nor eject. Likewise, you are deprived of your pipe; and the common homely comfort of spitting on your bait is totally denied you. The landscape takes on the prismatic colors of refraction, so that, while you can easily make out red, white, and blue Chinese dragons and mythological monsters, you are unable to discover the more welcome succulence, say, of a partridge on a limb. And the end of that head net is to be picked to holes by the brush, and finally to be snatched from you to sapling height, whence your pains will rescue it only in a useless condition. Probably then you will dance the war dance of exasperation on its dismembered remains. Still, there are times—in case of straight-away river paddling or open walking or lengthened waiting—when the net is a great comfort. And it is easily included in the pack.

Next in order come the various "dopes." And they are various. From the stickiest, blackest pastes to the silkiest, suavest oils they range, through the grades of essence, salve, and cream. Every man has his own recipe—the infallible. As a general rule, it may be stated that the thicker kinds last longer and are generally more thoroughly effective, but the lighter are pleasanter to wear, though requiring more frequent application. At a pinch, ordinary pork fat is good.

The Indians often make temporary use of the broad caribou leaf, crushing it between their palms and rubbing the juices on the skin. I know by experience that this is effective, but very transitory. It is, however, a good thing to use when resting on the trail, for, by the grace of Providence, flies are rarely bothersome as long as you are moving at a fair gait.

This does not always hold good, however, any more than the best fly dope is always effective. I remember most vividly the first day of a return journey from the shores of the Hudson Bay. The weather was rather oppressively close and overcast. We had paddled a few miles up river from the fur trading post, and then had landed in order to lighten the canoe for the ascent against the current. At that point the forest has already begun to dwindle toward the Land of Little Sticks, so that often miles and miles of open muskegs will intervene between groups of the stunted trees. Jim and I found ourselves a little over waist deep in luxuriant and tangled grasses that impeded and clogged our every footstep. Never shall I forget that country—its sad and lonely isolation, its dull lead sky, its silence, and the closeness of its stifling atmosphere—and never shall I see it otherwise than as in a dense brown haze, a haze composed of swarming millions of mosquitoes. There is not the slightest exaggeration in the statement. At every step new multitudes rushed into our faces to join the old. At times Jim's back was so covered with them that they

almost overlaid the color of the cloth. And as near as we could see, every square foot of the thousands of acres quartered its hordes.

We doped liberally, but without the slightest apparent effect. Probably two million squeamish mosquitoes were driven away by the disgust of our medicaments, but what good did that do us when eight million others were not so particular? At the last we hung bandannas under our hats, cut fans of leaves, and stumbled on through a most miserable day until we could build a smudge at evening.

For smoke is usually a specific. Not always, however—some midges seem to delight in it. The Indians make a tiny blaze of birch bark and pine twigs deep in a nest of grass and caribou leaves. When the flame is well started, they twist the growing vegetation, canopy-wise, above it. In that manner they gain a few minutes of dense, acrid smoke, which is enough for an Indian. A white man, however, needs something more elaborate.

The chief reason for your initial failure in making an effective smudge will be that you will not get your fire well started before piling on the damp smoke-material. It need not be a conflagration, but it should be bright and glowing, so that the punk birch or maple wood you add will not smother it entirely. After it is completed, you will not have to sit coughing in the thick of fumigation, as do many, but only to leeward and underneath. Your hat used as a fan will eddy

the smoke temporarily into desirable nooks and crevices. I have slept without annoyance on the Great Plains, where the mosquitoes seem to go in organized and predatory bands, merely by lying beneath a smudge that passed at least five feet above me. You will find the frying pan a handy brazier for the accommodation of a movable smoke to be transported to the interior of the tent. And it does not in the least hurt the frying pan. These be hints, briefly spoken, out of which at times you may have to construct elaborate campaigns.

But you come to grapples in the defense of comfort when night approaches. If you can eat and sleep well, you can stand almost any hardship. The night's rest is as carefully to be fore-assured as the food that sustains you. No precaution is too elaborate to certify unbroken repose.

By dark you will discover the peak of your tent to be liberally speckled with insects of all sorts. Especially is this true of an evening that threatens rain. Your smudge pan may drive away the mosquitoes, but merely stupefies the other varieties. You are forced to the manipulation of a balsam fan.

In your use of this simple implement you will betray the extent of your experience. Dick used at first to begin at the rear peak and brush as rapidly as possible toward the opening. The flies, thoroughly aroused, eddied about a few frantic moments, like leaves in an autumn wind, finally to settle close to

the sod in the crannies between the tent wall and the ground. Then Dick would lie flat on his belly in order to brush with equal vigor at these new lurking places. The flies repeated the autumn-leaf effect, and returned to the rear peak. This was amusing to me and furnished the flies with healthful, appetizing exercise, but was bad for Dick's soul. After a time he discovered the only successful method is the gentle one. Then he began at the peak and brushed forward slowly, very, very slowly, so that the limited intellect of his visitors did not become confused. Thus when they arrived at the opening they saw it and used it, instead of searching frantically for corners in which to hide from apparently vengeful destruction. Then he would close his tent flap securely, and turn in at once. So he was able to sleep until earliest daylight. At that time the mosquitoes again found him out.

Nine out of ten, perhaps ninety-nine out of a hundred, sleep in open tents. For absolute and perfect comfort proceed as follows: have your tentmaker sew you a tent of cheese cloth [1] with the same dimensions as your shelter, except that the walls should be loose and voluminous at the bottom. It should have no openings. Suspend this affair inside your tent by means of cords or tapes. Drop it about you. Spread it out. Lay rod cases, duffel bags, or rocks along its

[1] Do not allow yourself to be talked into substituting mosquito bar or bobinet. Any mesh coarser than cheese cloth will prove pregnable to the most enterprising of the smaller species.

lower edges to keep it spread. You will sleep beneath it like a child in winter. No driving out of reluctant flies; no enforced early rising; no danger of a single overlooked insect to make the midnight miserable. The cheese cloth weighs almost nothing, can be looped up out of the way in the daytime, admits the air readily. Nothing could fill the soul with more ecstatic satisfaction than to lie for a moment before going to sleep listening to a noise outside like an able-bodied sawmill that indicates the *ping-gosh* are abroad.

The carrying we did with the universal tumpline. This is usually described as a strap passed about a pack and across the forehead of the bearer. The description is incorrect. It passes across the top of the head. The weight should rest on the small of the back just above the hips, not on the broad of the back, as most beginners place it. Then the chin should be dropped, the body slanted sharply forward—and you may be able to stagger forty rods at your first attempt.

Use soon accustoms you to carrying, however. The first time I ever did any packing I had a hard time stumbling a few hundred feet over a hill portage with just fifty pounds on my back. By the end of that same trip I could carry a hundred pounds and a lot of miscellaneous traps, like canoe poles and guns, without serious inconvenience and over a long portage. This quickly gained power comes partly from a strengthening of the muscles of the neck, but more from a mastery of balance. A pack can twist you as

suddenly and expertly on your back as the best of wrestlers. It has a head lock on you, and you have to go or break your neck. After a time you adjust your movements, just as after a time you can travel on snowshoes through heavy down timber without taking conscious thought as to the placing of your feet.

But at first packing is as near infernal punishment as merely mundane conditions can compass. Sixteen brand-new muscles ache, at first dully, then sharply, then intolerably, until it seems you cannot bear it another second. You are unable to keep your feet. A stagger means an effort at recovery, and an effort at recovery means that you trip when you place your feet, and that means, if you are lucky enough not to be thrown, an extra tweak for every one of the sixteen new muscles. At first you rest every time you feel tired. Then you begin to feel very tired every fifty feet. Then you have to do the best you can, and prove the pluck that is in you.

Woods-walking differs as widely from ordinary walking as trap-shooting from field-shooting. A good pedestrian may tire very quickly in the forest. No two successive steps are of the same length; no two successive steps fall on the same quality of footing; no two successive steps are on the same level. Those three are the major elements of fatigue. Add, further, the facts that your way is continually obstructed both by real difficulties—such as trees, trunks, and rocks—

and lesser annoyances—such as branches, bushes, and even spider webs. These things all combine against endurance. The inexperienced does not know how to meet them with a minimum of effort. The tenderfoot is in a constant state of muscular and mental rigidity against a fall or a stumble or a cut across the face from some one of the infinitely numerous woods scourges. This rigidity speedily exhausts the vital force.

It comes at the last to be entirely a matter of experience. Any man can walk in the woods all day at some gait. But his speed will depend on his skill. It is exactly like making your way through heavy, dry sand. As long as you restrain yourself to a certain leisurely plodding, you get along without extraordinary effort, while even a slight increase of speed drags fiercely at your feet. So it is with the woods. As long as you walk slowly enough so that you can pick your footing, and lift aside easily the branches that menace your face, you will expend little nervous energy. But the slightest pressing, the slightest inclination to go beyond what may be called your physical foresight, lands you immediately in difficulties. You stumble, you break through the brush, you shut your eyes to avoid sharp switchings. The reservoir of your energy is open full cock. In about an hour you feel very, very tired.

This principle holds rigidly true of everyone, from the softest tenderfoot to the expertest forest runner.

For each there exists a normal rate of travel, beyond which are penalties. Only, the forest runner, by long use, has raised the exponent of his powers. Perhaps as a working hypothesis the following might be recommended: *One good step is worth six stumbling steps; go only fast enough to assure that good one.*

You will learn besides a number of things, practically, which memory cannot summon to order for instance here. "Brush slanted across your path is easier lifted over your head and dropped behind you than pushed aside," will do as an example.

A good woods-walker progresses without apparent hurry. I have followed the disappearing back of Tawabinisáy when, as my companion elegantly expressed it, "if you stopped to spit, you got lost." Tawabinisáy wandered through the forest, his hands in his pockets, humming a little Indian hymn. And we were breaking madly along behind him with the crashing of many timbers.

SUGGESTIONS FOR OUTFIT

In reply to inquiries as to necessary outfit for camping and woods traveling, the author furnishes the following lists:

1. *Provisions per man, one week*

7 lbs. flour; 5 lbs. pork; 1-5 lb. tea; 2 lbs. beans; 1 1-2 lbs. sugar; 1 1-2 lbs. rice; 1 1-2 lbs. prunes and raisins; 1-10 lb. lard; 1 lb. oatmeal; baking powder; matches; soap; pepper; salt; 1-3 lb. tobacco. (Weight, a little over 20 lbs.) This will last much longer if you get game and fish.

2. *Pack one, or absolute necessities for hard trip*

Wear hat; suit woolen underwear; shirt; trousers; socks; silk handkerchief; cotton handkerchief; moccasins.

Carry sweater (3 lbs.); extra drawers (1 1-2 lbs.); 2 extra pairs socks; gloves (buckskin); towel; 2 extra pairs moccasins; surgeons' plaster; laxative; pistol and cartridges; fishing tackle; blanket (7 1-2 lbs.); rubber blanket (1 lb.); tent (8 lbs.); small ax (2 1-2 lbs.); knife; mosquito dope; compass; match box; tooth

brush; comb; small whetstone. (Weight, about 25 lbs.) 2 tin or aluminum pails; 1 frying pan; 1 cup; 1 knife, fork, and spoon. (Weight, 4 lbs., if of aluminum.)

Whole pack under 50 lbs. In case of two or more people, each pack would be lighter, as tent, tinware, etc., would do for both.

3. *Pack two—for luxuries and easy trips—extra to pack one*

More fishing tackle; camera; 1 more pair socks; 1 more suit underclothes; extra sweater; wading shoes of canvas; large ax; mosquito net; mending materials; kettle; candles; more cooking utensils; extra shirt; whisky.

CHAPTER II

Camping Comfort in the Western Mountains

The Needs of Mountain Travel—Equipment for Man and Horse—Provide for Extremes of Temperature—Be Prepared for Emergencies—Cultivate the Virtues of Independence and Self-reliance.

As to outfit, certain especial conditions will differentiate your needs from those of forest and canoe travel.

You will in the changing altitudes be exposed to greater variations in temperature. At morning you may travel in the hot arid foothills; at noon you will be in the cool shades of the big pines; toward evening you may wallow through snowdrifts; and at dark you may camp where morning will show you icicles hanging from the brinks of little waterfalls. Behind your saddle you will want to carry a sweater, or, better still, a buckskin waistcoat. Your arms are never cold, anyway, and the pockets of such a waistcoat, made many and deep, are handy receptacles for smokables, matches, cartridges, and the like. For the nighttime, when the cold creeps down from the high peaks, you should provide yourself with a suit of very heavy underwear and an extra sweater or a buckskin shirt.

The latter is lighter, softer, and more impervious to the wind than the sweater. Here again I wish to place myself on record as opposed to a coat. It is a useless ornament, assumed but rarely, and then only as substitute for a handier garment.

Inasmuch as you will be a great deal called on to handle abrading and sometimes frozen ropes, you will want a pair of heavy buckskin gauntlets. An extra pair of stout high-laced boots with small Hungarian hobnails will come handy. It is marvelous how quickly leather wears out in the downhill friction of granite and shale. I once found the heels of a new pair of shoes almost ground away by a single giant-strides descent of a steep, shale-covered, thirteen-thousand-foot mountain. Having no others, I patched them with hair-covered rawhide and a bit of horseshoe. It sufficed, but was a long and disagreeable job which an extra pair would have obviated.

Balsam is practically unknown in the high hills, and the rocks are especially hard. Therefore, you will take, in addition to your gray army blanket, a thick quilt or comforter to save your bones. This, with your saddle blankets and pads as foundation, should give you ease—if you are tough. Otherwise, take a second quilt.

A tarpaulin of heavy canvas, 17 x 6 feet, goes under you, and can be, if necessary, drawn up to cover your head. We never used a tent. Since you do not have to pack your outfit on your own back, you can,

if you choose, include a small pillow. Your other personal belongings are those you would carry into the forest. I have elsewhere described what they should be.

Now as to the equipment for your horses.

The most important point for yourself is your riding saddle. The cowboy or military style and seat are the only practicable ones. Perhaps of these two the cowboy saddle is the better, for the simple reason that often in roping or leading a refractory horse the horn is a great help. For steep-trail work the double cinch is preferable to the single, as it need not be pulled so tight to hold the saddle in place.

Your riding bridle you will make of an ordinary halter by riveting two snaps to the lower part of the headpiece just above the corners of the horse's mouth. These are snapped into the rings of the bit. At night you unsnap the bit, remove it and the reins, and leave the halter part on the horse. Each animal, riding and packing, has furthermore a short lead rope attached always to his halter ring.

Of pack saddles the ordinary sawbuck tree is by all odds the best, provided it fits. It rarely does. If you can adjust the wood accurately to the anatomy of the individual horse, so that the side pieces bear evenly and smoothly without gouging the withers or chafing the back, you are possessed of the handiest machine made for the purpose. Should individual fitting prove impracticable, get an old, *low,* California riding tree and

have a blacksmith bolt an upright spike on the cantle. You can hang the loops of the kyacks or alforjas—the sacks slung on either side the horse—from the pommel and this iron spike. Whatever the saddle chosen, it should be supplied with breast straps, breeching, and two good cinches.

The kyacks or alforjas just mentioned are made either of heavy canvas, or of rawhide shaped square and dried over boxes. After drying, the boxes are removed, leaving the stiff rawhide like small trunks open at the top. I prefer the canvas, for the reason that they can be folded and packed for railroad transportation. If a stiffer receptacle is wanted for miscellaneous loose small articles, you can insert a soap box inside the canvas. It cannot be denied that the rawhide will stand rougher usage.

Probably the point now of greatest importance is that of saddle padding. A sore back is the easiest thing in the world to induce—three hours' chafing will turn the trick—and once it is done you are in trouble for a month. No precautions or pains are too great to take in assuring your pack animals against this. On a pinch you will give up cheerfully part of your bedding to the cause. However, two good quality woolen blankets properly and smoothly folded, a pad made of two ordinary collar pads sewed parallel by means of canvas strips in such a manner as to lie along both sides of the backbone, a well-fitted saddle, and care in packing will nearly always suffice. I have

gone months without having to doctor a single abrasion.

You will furthermore want a pack cinch and a pack rope for each horse. The former are of canvas or webbing, provided with a ring at one end and a big bolted wooden hook at the other. The latter should be half-inch lines of good quality. Thirty-three feet is enough for packing only; but we usually bought them forty feet long, so they could be used also as picket ropes. Do not fail to include several extra. They are always fraying out, getting broken, being cut to free a fallen horse, or becoming lost.

Besides the picket ropes, you will also provide for each horse a pair of strong hobbles. Take them to a harnessmaker and have him sew inside each ankle band a broad strip of soft wash-leather twice the width of the band. This will save much chafing. Some advocate sheepskin with the wool on, but this I have found tends to soak up water or to freeze hard. At least two loud cowbells, with neck straps, are handy to assist you in locating whither the bunch may have strayed during the night. They should be hung on the loose horses most inclined to wander.

Accidents are common in the hills. The repair kit is normally rather comprehensive. Buy a number of extra latigos, or cinch straps. Include many copper rivets of all sizes—they are the best quick-repair known for almost everything, from putting together a smashed pack saddle to cobbling a worn-out boot.

Your horseshoeing outfit should be complete with paring knife, rasp, nail set, clippers, hammer, nails, and shoes. The latter will be the malleable soft iron, low-calked "Goodenough," which can be fitted cold. Purchase a dozen front shoes and a dozen and a half hind shoes. The latter wear out faster on the trail. A box or so of hobnails for your own boots, a waxed end and awl, a whetstone, a file, and a piece of buckskin for strings and patches complete the list.

Thus equipped, with your grub supply, your cooking utensils, your personal effects, your rifle, and your fishing tackle, you should be able to go anywhere that man and horses can go, entirely self-reliant, independent of the towns.

CHAPTER III

Camp Cookery

The True Artist—Never Carry a Stove—How to Get Results—Cook-book Recipes Useless — A Man-made Cake — Bread Baked in a Kettle—A Camp Orgy.

Now camp cooks are of two sorts. Anybody can with a little practice fry bacon, steak, or flapjacks, and boil coffee. The reduction of the raw material to its most obvious cooked result is within the reach of all but the most hopeless tenderfoot, who never knows the salt sack from the sugar sack. But your true artist at the business is he who can from six ingredients, by permutation, combination, and the genius that is in him, turn out a full score of dishes. For simple example: *Given*, rice, oatmeal, and raisins. Your expert accomplishes the following:

Item—Boiled rice.

Item—Boiled oatmeal.

Item—Rice boiled until soft, then stiffened by the addition of quarter as much oatmeal.

Item—Oatmeal in which is boiled almost to the dissolving point a third as much rice.

These latter two dishes taste entirely unlike each other or their separate ingredients. They are moreover great in nutrition.

Item—Boiled rice and raisins.

Item—Dish number three with raisins.

Item—Rice boiled with raisins, sugar sprinkled on top, and then baked.

Item—Ditto with dish number three.

All these are good—and different.

Some people like to cook and have a natural knack for it. Others hate it. If you are one of the former, select a propitious moment to suggest that you will cook, if the rest will wash the dishes and supply the wood and water. Thus you will get first crack at the fire in the chill of morning; and at night you can squat on your heels doing light labor while the others rustle.

In a mountain trip small stout bags for the provisions are necessary. They should be big enough to contain, say, five pounds of corn meal, and should tie firmly at the top. It will be absolutely labor lost for you to mark them on the outside, as the outside soon will become uniform in color with your marking. Tags might do, if occasionally renewed. But if you have the instinct, you will soon come to recognize the appearance of the different bags, as you recognize the features of your family. They should contain small quantities for immediate use of the provisions, the main stock of which is carried on another pack animal. One tin plate apiece and "one to grow on"; the same of tin cups; half a dozen spoons; four knives and forks; a big spoon; two frying pans; a broiler: a

coffee pot; a Dutch oven; and three light sheet-iron pails to nest in one another was what we carried on this trip. You see, we had horses. Of course in the woods that outfit would be materially reduced.

For the same reason, since we had our carrying done for us, we took along two flat iron bars, about twenty-four inches in length. These, laid across two stones between which the fire had been built, we used to support our cooking utensils stovewise. I should never carry a stove. This arrangement is quite as effective, and possesses the added advantage that wood does not have to be cut for it of any definite length. Again, in the woods these iron bars would be a senseless burden. But early you will learn that while it is foolish to carry a single ounce more than will pay in comfort or convenience for its own transportation, it is equally foolish to refuse the comforts or conveniences that modified circumstance will permit you. To carry only a forest equipment with pack animals would be as silly as to carry only a pack-animal outfit on a Pullman car. Only look out that you do not reverse it.

Even if you do not intend to wash dishes, bring along some "Gold Dust." It is much simpler in getting at odd corners of obstinate kettles than any soap. All you have to do is to boil some of it in that kettle, and the utensil is tamed at once.

That's about all you, as expert cook, are going to need in the way of equipment. Now as to your fire.

There are a number of ways of building a cooking fire, but they share one first requisite: it should be small. A blaze will burn everything, including your hands and your temper. Two logs laid side by side and slanted toward each other so that small things can go on the narrow end and big things on the wide end; flat rocks arranged in the same manner; a narrow trench in which the fire is built, and the flat irons just described—these are the best known methods. Use dry wood. Arrange to do your boiling first—in the flame; and your frying and broiling last—after the flames have died to coals.

So much in general. You must remember that open-air cooking is in many things quite different from indoor cooking. You have different utensils, are exposed to varying temperatures, are limited in resources, and pursued by a necessity of haste. Preconceived notions must go by the board. You are after results; and if you get them, do not mind the feminines of your household lifting the hands of horror over the unorthodox means. Mighty few women I have ever seen were good camp-fire cooks; not because camp-fire cookery is especially difficult, but because they are temperamentally incapable of ridding themselves of the notion that certain things should be done in a certain way, and because if an ingredient lacks, they cannot bring themselves to substitute an approximation. They would rather abandon the dish than do violence to the sacred art.

Most camp-cookery advice is quite useless for the same reason. I have seen many a recipe begin with the words: "Take the yolks of four eggs, half a cup of butter, and a cup of fresh milk—" As if anyone really camping in the wilderness ever had eggs, butter, and milk!

Now here is something I cooked for this particular celebration. Every woman to whom I have ever described it has informed me vehemently that it is not cake, and must be "horrid." Perhaps it is not cake, but it looks yellow and light, and tastes like cake.

First, I took two cups of flour, and a half cup of corn meal to make it look yellow. In this I mixed a lot of baking powder—about twice what one should use for bread—and topped off with a cup of sugar. The whole I mixed with water into a light dough. Into the dough went raisins that had previously been boiled to swell them up. Thus was the cake mixed. Now I poured half the dough into the Dutch oven, sprinkled it with a good layer of sugar, cinnamon, and unboiled raisins; poured in the rest of the dough; repeated the layer of sugar, cinnamon, and raisins, and baked in the Dutch oven. It was gorgeous, and we ate it at one fell swoop.

While we are about it, we may as well work backward on this particular orgy by describing the rest of our dessert. In addition to the cake and some stewed apricots, I, as cook of the day, constructed also a pudding.

The basis was flour—two cups of it. Into this I dumped a handful of raisins, a tablespoonful of baking powder, two of sugar, and about a pound of fat salt pork cut into little cubes. This I mixed up into a mess by means of a cup or so of water and a quantity of larrupy dope.[1] Then I dipped a flour sack in hot water, wrung it out, sprinkled it with dry flour, and half filled it with my pudding mixture. The whole outfit I boiled for two hours in a kettle. It, too, was good to the palate, and was even better sliced and fried the following morning.

On this occasion we had deer, grouse, and ducks in the larder. The best way to treat them is as follows. You may be sure we adopted the best way.

When your deer is fresh you will enjoy greatly a dish of liver and bacon. Only, the liver you will discover to be a great deal tenderer and more delicate than any calf's liver you ever ate. There is this difference: a deer's liver should be parboiled in order to get rid of a green bitter scum that will rise to the surface and which you must skim off.

Next in order is the "back strap" and tenderloin, which is always tender, even when fresh. The hams should be kept at least five days. Deer steak, to my notion, is best broiled, though occasionally it is pleasant, by way of variety, to fry it. In that case a brown gravy is made by thoroughly heating flour in the grease, and then stirring in water. Deer steak

[1] Camp lingo for any kind of syrup.

threaded on switches and "barbecued" over the coals is delicious. The outside will be a little blackened, but all the juices will be retained. To enjoy this to the utmost you should take it in your fingers and *gnaw*. The only permissible implement is your hunting knife. Do not forget to peel and char slightly the switches on which you thread the meat; otherwise they will impart their fresh-wood taste.

By this time the ribs are in condition. Cut little slits between them, and through the slits thread in and out long strips of bacon. Cut other little gashes, and fill these gashes with onions chopped very fine. Suspend the ribs across two stones between which you have allowed a fire to die down to coals.

There remain now the hams, shoulders, and heart. The two former furnish steaks. The latter you will make into a "*bouillon*." Here insert itself quite naturally the philosophy of boiling meat. It may be stated in a paragraph.

If you want boiled meat, put it in hot water. That sets the juices. If you want soup, put it in cold water and bring to a boil. That sets free the juices. Remember this.

Now you start your *bouillon* cold. Into a kettle of water put your deer hearts, or your fish, a chunk of pork, and some salt. Bring to a boil. Next drop in quartered potatoes, several small whole onions, a half cupful of rice, a can of tomatoes—if you have any. Boil slowly for an hour or so—until things pierce

easily under the fork. Add several chunks of bread and a little flour for thickening. Boil down to about a chowder consistency, and serve hot. It is all you will need for that meal; and you will eat of it until there is no more.

I am supposing throughout that you know enough to use salt and pepper when needed.

So much for your deer. The grouse you can split and fry; in which case the brown gravy described for the fried deer steak is just the thing. Or you can boil him. If you do that, put him into hot water, boil slowly, skim frequently, and add dumplings mixed of flour, baking powder, and a little lard. Or you can roast him in your Dutch oven with your ducks.

Perhaps it might be well here to explain the Dutch oven. It is a heavy iron kettle with little legs and an iron cover. The theory of it is that coals go among the little legs and on top of the iron cover. This heats the inside, and so cooking results. That, you will observe, is the theory.

In practice you will have to remember a good many things. In the first place, while other affairs are preparing, lay the cover on the fire to heat it through; but not on too hot a place nor too long, lest it warp and so fit loosely. Also, the oven itself is to be heated through, and well greased. Your first baking will undoubtedly be burned on the bottom. It is almost impossible without many trials to understand just how little heat suffices underneath. Sometimes it seems

that the warmed earth where the fire has been is enough. And on top you do not want a bonfire. A nice even heat and patience are the proper ingredients. Nor drop into the error of letting your bread chill, and so fall to unpalatable heaviness. Probably for some time you will alternate between the extremes of heavy crusts with doughy insides, and white, weighty boiler-plate, with no distinguishable crusts at all. Above all, do not lift the lid too often for the sake of taking a look. Have faith.

There are other ways of baking bread. In the North Country forests, where you carry everything on your back, you will do it in the frying pan. The mixture should be a rather thick batter or a rather thin dough. It is turned into the frying pan and baked first on one side, then on the other, the pan being propped on edge facing the fire. The whole secret of success is first to set your pan horizontal and about three feet from the fire in order that the mixture may be thoroughly warmed—not heated—before the pan is propped on edge. Still another way of baking is in a reflector oven of tin. This is highly satisfactory, provided the oven is built on the scientific angles to throw the heat evenly on all parts of the bread pan and equally on top and bottom. It is not so easy as you might imagine to get a good one made. These reflectors are all right for a permanent camp, but too fragile for transportation on pack animals.

As for bread, try it unleavened once in a while, by

way of change. It is really very good—just salt, water, flour, and a very little sugar. For those who like their bread "all crust," it is especially toothsome. The usual camp bread that I have found the most successful has been in the proportion of two cups of flour to a teaspoonful of salt, one of sugar, and three of baking powder. Sugar or cinnamon sprinkled on top is sometimes pleasant. Test by thrusting a splinter into the loaf. If dough adheres to the wood, the bread is not done. Biscuits are made by using twice as much baking powder and about two tablespoonfuls of lard for shortening. They bake much more quickly than the bread. Johnny-cake you mix of corn meal three cups, flour one cup, sugar four spoonfuls, salt one spoonful, baking powder four spoonfuls, and lard twice as much as for biscuits. It also is good, very good.

The flapjack is first cousin to bread, very palatable, and extremely indigestible when made of flour, as is ordinarily done. However, the self-raising buckwheat flour makes an excellent flapjack, which is likewise good for your insides. The batter is rather thin, is poured into the piping-hot greased pan, "flipped," when brown on one side, and eaten with larrupy dope or brown gravy.

When you come to consider potatoes and beans and onions and such matters, remember one thing: that in the higher altitudes water boils at a low temperature, and that therefore you must not expect your boiled food to cook very rapidly. In fact, you'd better leave beans

at home. We did. Potatoes you can sometimes tease along by quartering them.

Rolled oats are better than oatmeal. Put them in plenty of water and boil down to the desired consistency. In lack of cream, you will probably want it rather soft.

Put your coffee into cold water, bring to a boil, let boil for about two minutes, and immediately set off. Settle by letting a half cup of cold water flow slowly into the pot from the height of a foot or so. If your utensils are clean, you will surely have good coffee by this simple method. Of course you will never boil your tea.

The sun was nearly down when we raised our long yell. The cow puncher promptly responded. We ate. Then we smoked. Then we basely left all our dishes until the morrow, and followed our cow puncher to his log cabin, where we were to spend the evening.

By now it was dark, and a bitter cold swooped down from the mountains. We built a fire in a huge stone fireplace and sat around in the flickering light telling ghost stories to one another. The place was rudely furnished, with only a hard earthen floor, and chairs hewn by the ax. Rifles, spurs, bits, revolvers, branding irons in turn caught the light and vanished in the shadow. The skin of a bear looked at us from hollow eye sockets, in which there were no eyes. We talked of the Long Trail. Outside, the wind, rising, howled through the shakes of the roof.

Household Note Book

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